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The PHILIPPINES

Long-term Projection of Supply of and Demand for SELECTED AGRICULTURAL PRODUCTS

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U.S. DEPARTMENT OF AGRICULTURE

This report was prepared for the Economic Research Service and the Foreign Agricultural Service of the United States Department of Agriculture under contract with Mercantile Incorporated (Robot Statistics Division), Manila, Philippines. Administration of the contract was by the Far East Analysis Branch, Regional Analysis Division.

It is an independent study. The views expressed herein are those of Mercantile Incorporated and do not necessarily reflect those of the United States Department of Agriculture.

Published for the U. S. Department of Agriculture, Economic Research Service
by the Israel Program for Scientific Translations
Printed in Jerusalem by S. Monson

FOREWORD

This study investigates the long-term supply and demand in the Philippines for selected agricultural commodities and, together with similar studies in other countries, constitutes part of the evaluation of long-term prospects regarding the supply of and demand for agricultural products throughout the world being undertaken by the U. S. Department of Agriculture.

This final report is submitted to the U. S. Department of Agriculture under the terms of Agreement No. S-621-fa-984 (AGRIC). The study was officially started on October 15, 1959, and incorporates findings and analyses up to August 1, 1961, when formal work on the project was terminated.

The basic objective of the study is to obtain a national projection to 1965 and 1975 of the import demand in the Philippines for selected agricultural commodities, namely: rice, corn, wheat, meat, dairy, tobacco, cotton and tallow. Apart from its basic objective, the terms of the project study require (1) the establishment of systematic methods and techniques for long-term projections so that projections can be revised or adjusted readily in the light of new trends and developments which cannot be foreseen at the present; (2) an agreement between the researchers and the U. S. Department of Agriculture that the public in the Philippines and in the United States of America be granted the benefit of the research, investigations, surveys, analyses, and conclusions covered by the study (and specified in the Agreement).

In the preparation of the study, extensive consultations were made with various individuals in government agencies and in private enterprises. While all available and relevant information and statistical data were utilized, it has not been possible to investigate and reconcile completely some conflicting data. However, it is felt that the statistical discrepancies have not been of sufficient magnitude to invalidate the primary conclusions of the study.

Most of the hundreds of persons who assisted, in large or small ways, towards the accomplishment of this report cannot be singled out. However, grateful acknowledgment is given to them. Particular mention must be made of Fr. Michael McPhelin, S. J., Chairman of the Advisory Panel for the study, who furnished advice and encouragement; and Professor H. F. Smith, former FAO Agricultural Statistician, who helped in drawing up the sample design for the household budget survey; and the members of the 1,400 households whose full cooperation during the survey made possible new data and insight into demand relationships.

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PHILIPPINE PROJECTION - SUMMARY

The General Economy

For the economy in general, population will increase about 3.2 percent annually, reaching a total of 44,505,500 by mid-1975. Of this total, approximately 66 percent will be rural. Concommitantly, aggregate gross domestic product will advance at an average annual rate of 4.57 percent from 1959 to 1965, and at 5.24 percent from 1965 to 1975, reaching a 1975 total of about P24.7 billion at constant 1956 prices. This implies an annual per capita gross domestic product growth rate of about 1.5 percent from 1959 to 1965, and over a 2 percent annual growth rate from 1965 to 1975.

The annual gross domestic investment from 1959 to 1975 will average about P2.7 billion in constant 1956 prices. Domestic savings are assumed to account for the greater part of capital formation with the average annual contribution of foreign investments equaling about 2.7 percent of gross domestic investments by 1975. With an incremental capital-output ratio of 2:1, investment requirements will move the 1975 investment coefficient to 10.8 percent of gross domestic product.

It is projected that if domestic production meets the 1975 final demand projections the gross value of production in the country will increase from P11.5 billion in 1956 to P17.9 and P30.4 billion for 1965 and 1975 respectively (1956 prices). Under this condition, the requirement for raw material and intermediate products would increase from P3.9 billion in 1956 to more than P6 billion in 1965 and to P10 billion in 1975. Of these totals the requirement for imports would rise from P680 million in 1956 to P1.1 and over P2 billion in 1965 and 1975 respectively. Since this projected import requirement is substantially beyond the country's import capability, the final projection allowed for import substitution which in turn reduced requirements for imported raw materials and intermediate products by some P103 million in 1965, and by some P176 million in 1975.

Agriculture

The specific projections for agriculture were related to eight agricultural commodities; rice, corn, wheat and wheat flour, meat products, dairy products, tobacco, cotton, and tallow. In 1956, these eight commodities and their products contributed about one-fifth of the country's aggregate gross product. In terms of the total agricultural crop production, the above crops accounted for almost 50 percent of the 1959 production value. Of the total consumption of agricultural products in 1956 more than 73 percent consisted of seven of the eight agricultural commodities under study. Processing of palay by rice mills represented more than 58 percent of the total utilization of agricultural commodities and about 23 percent of the total industrial consumption of raw materials and intermediate goods. In 1956, total imports of the selected agricultural commodities and their products equaled P299.7 million· 8.4 percent of their total domestic demand and 9.1 percent as great as the total domestic supply.

Commodity Summary

Palay.--The production of palay or rough rice constitutes about 40 percent of the total agricultural production in the Philippines. Approximately 89 percent of the crop is milled which in turn equals roughly the total 1959 demand for milled rice. By 1975, it is projected that total palay production will increase some 76 percent over the 1960 level to 6.6 million metric tons. To produce this volume, area planted will expand over 58 percent to 4.7 million hectares. Most of the future expansion of the area planted to rice is expected to be in upland rice which, by 1975 will constitute over 29 percent of the total area planted to rice. Although new, high yielding varieties are expected to be developed in the near future along with a more general adoption of improved cultural systems with additional irrigation and fertilization, yields are projected to increase only 132 kilos per hectare from 1959 to 1975.

On the basis of the projection figures, no imports of milled rice are expected by 1965 and 1975.

Corn.--The two major areas of the Visayas and Mindanao Islands account for more than 78 percent of the total Philippine corn production. By 1975, corn production is projected to increase some 120 percent over the 1960 production to a level of 2.6 million metric tons. Hectares planted will increase over 70 percent over 1960 while yield per hectare is expected to advance about 31 percent to a 1975 average of 840 kilos per hectare.

With domestic demand totaling approximately 2 million metric tons by 1975, no imports are expected for 1965 or 1975.

Wheat and wheat flour.--Assuming that the land area planted to wheat will reach 1,000 hectares, and that the average yield per hectare reaches 500 kilos, the Philippines will have a modest wheat grain production of some 500 metric tons by 1975.

Further assuming that there will be five additional flour mills, total flour milling capacity is projected to reach 476,300 metric tons of flour by 1975; an increase of some 87 percent over the 1960 level.

Total projected demand for wheat (grain) in 1975 is 535,000 metric tons. With the additional milling capacity it is expected that wheat imports will shift to only wheat grain by 1965 and 1975. However, some flour may be authorized for importation in order to prevent absolute control of flour marketing by domestic wheat flour mills.

Meat and meat products.--Philippine livestock produced for meat purposes includes carabao, cattle, swine, poultry, goats, and sheep. By 1975, total meat supply from the above livestock is projected to reach 713,961 metric tons.

By 1975, the carabao population is expected to increase from the 1960 level of 3.7 million to 5.8 million. During the same period the cattle population will increase about 72 percent to 1.9 million; swine population will increase 154 percent to 16.7 million; and chickens are expected to increase 279 percent to 212.7 million.

On the basis of the above increase in livestock population the 1975 supply of meat in metric tons is projected as follows: carabao, 57,215; beef, 85,750; pork, 433,340; goats, 3,460; horses, 2,062; chickens, 727,630; ducks, 3,486; geese, 421; and turkey, 97.

Swine dominates the market as a source of meat with 50 to 54 percent of the swine population slaughtered yearly. By 1975, it is projected that pork will account for 65 percent of the total meat supply.

Imports of meat and meat products are expected to shift from processed canned meat to fresh frozen meat and live animals for slaughter. Imports of processed and canned meats are projected to taper off from 1965, and there will be no significant imports of such products by 1975. However, the importation of special or fancy types of processed and canned meat products is not to be precluded.

The projections indicate that the imports of fresh frozen meats by 1965 may be three times that of 1959 (in quantity terms); and more than four times the 1959 level by 1975. This reverses the declining trend for imports of this form of meat products that occurred from 1956 to 1960.

Imports of livestock animals for food are projected to increase more than five times the 1959 level by 1965, and more than nine times by 1975. Again, this reverses the declining trend from 1957 to 1960 (in quantity terms) in imports of live animals.

Dairy products.--Although the dairy industry in the Philippines is extremely underdeveloped, the demand for dairy products is large. Therefore, 96 percent of the Philippine supply is imported in various forms of dairy products.

By 1975, the number of milk animals is projected to increase about 170 percent over the 1959 level to a total of 63,715. With this dairy population, 1975 milk production is expected to reach 3,555 metric tons (high-level projection). Nevertheless, the low price of filled milk, which equals approximately 70 percent of the price of imported evaporated and condensed whole milk, is expected to continue the shift in consumption from whole milk to filled milk, at least for households in the low-income group.

It is projected that imports of dairy products will exhibit a slight drop in 1965 (in quantity terms), but show significant increases from 1965 to 1975. The drop in the imports of dairy products (in quantity terms) from 1960 to 1965 is attributable to the expansion in domestic production of filled milk.

Cotton and cotton textiles.--Cotton growing has remained a minor agricultural activity in the Philippines and in 1960 constituted less than 2 percent of the total available supply. Over 98 percent of the requirements for the cotton textile industry has been imported during the last 7 years.

Increasing at an annual average rate of 7.8 percent, the area planted in cotton in 1975 is projected to total 10,780 hectares. Considering this increase, production of seed cotton is estimated to reach 8,620 metric tons by 1975.

Under the auspices of favorable government programs, it is foreseen that the Philippines textile industry will continue to develop until it reaches the capacity to meet all requirements for domestic cotton textiles.

Import projections of cotton and cotton products indicate a shift from imports of cotton products to raw cotton. Imports of cotton products (including grey cloth as well as finished cloth, yarns, and threads) are expected to decline by more than 30 percent from 1960 to 1965. No imports of cotton products are projected for 1975. However, raw cotton imports are expected to increase rapidly and by 1975, imports will be more than twice that of 1960 or some 65,580 metric tons.

Tobacco --While the cigar filler type of tobacco has been produced extensively in the Philippines for centuries, it is only during the last 5 years that the production of Virginia leaf tobacco became so extensive that it created a surplus.

By 1975, it is projected that the area planted to native cigar filler leaf tobacco will respond readily to changes in final demand and that there will be a balance between the domestic supply and total demand (including exports). The above total demand is expected to reach 26,000 metric tons of leaf equivalent, of which some 10,000 tons are projected for export.

Assuming that the price support program for Virginia leaf tobacco continues to 1975, and that government coverage will not be over 75 percent of the total production in any one year, hectarage of this crop is projected to increase 55 percent over its 1960 level to over 79,130 hectares by 1975. However, government stocks may reach approximately 80,000 metric tons by 1965 and curtail the increase in the planted area.

Although there were 31,000 metric tons of tobacco imported in 1960, mostly in terms of leaf tobacco, no imports of tobacco and tobacco products are projected for 1965 and 1975. An exception may be the import of small quantities of special types of tobacco products to meet a particular demand.

Tallow.--The inadequate domestic supply of cattle and sheep does not indicate any likely prospects of tallow being produced in substantial amounts in the Philippines for the foreseeable future. Therefore, the Philippines has been importing tallow and is expected to increase these imports 57 percent over the 1960 volume to 10,000 metric tons by 1975.

Subsequent Developments as of June 1962

It has been stressed throughout the Report that projections therein were subject to significant changes in the direction and scope of domestic policies. During the interim between the completion and the final publication of this Report, the Philippine economy has come under the direction of a newly elected administration. Concommitant changes in the direction and scope of domestic policies established by the new administration have modified, to some extent, the bases of the projections, particularly with respect to the following:

1. A higher average annual growth rate of 3 percent in per capita gross domestic product (in real terms, at 1956 prices) has now been established as a target compared with the study's projections of 1.5 percent from 1959 to 1965, and over 2 percent from 1965 to 1975;

2. The investment coefficient is now programmed by the government to increase to more than 16 percent by 1967 as compared to the 9 to 10 percent projected by the study;

3. The new administration has established an extensive price-support program for rice and corn which calls for annual expenditures to P100 million for government purchases of these commodities;

4. The establishment of a "decontrol" program abolishing Central Bank licensing of foreign exchange and the implementation of a "floating" exchange rate.

THE PHILIPPINES
LONG-TERM PROJECTIONS OF SUPPLY OF AND DEMAND FOR SELECTED AGRICULTURAL PRODUCTS
1965 AND 1975

INTRODUCTION

This research study investigates the long-term supply and demand in the Philippines for rice, corn, wheat and wheat flour, meat products, dairy products, tobacco, cotton and tallow. Useful information concerning substitutes for the above products has also been collected and analyzed. The primary objective of the study is to obtain a national projection of the import demand in the Philippines, by 1965 and 1975, for the above agricultural products. Secondary objectives are the following:

(1) Long-term projections of the Philippine economy, particularly of major or basic variables such as gross national product, population, labor force, national income by industrial origin, etc.

(2) Estimates of the aggregate demand in the Philippines for each of the specified agricultural products, by 1965 and 1975.

(3) Determination of the magnitudes of the domestic supplies of each of the specified products, by 1965 and 1975.

(4) Estimates of the import demand for these products by 1965 and 1975, on the bases of the long-term demand and supply projections.

In the accomplishment of the objectives, much has been left to the researcher in establishing appropriate methods and techniques. The only specification to the methods and techniques that may be developed for preparing the long-run projections (of supply and demand for the agricultural commodities involved) is that they be "made in such a manner that they can be revised readily by current adjustment of assumptions in the light of the most recent trends, developments, and other facts which might have a bearing on prospects".1/ Thus, while the detailed Plan of Work (Appendix A to the Agreement) outlines the basic approaches and specific areas of investigation, the details of what is felt (and hoped) to be a sound schema for undertaking projections have been developed only after some thorough examination of existing data and techniques.

This schema, in the form of the input-output table, including all sectors producing and consuming the eight agricultural commodities and their important substitutes, affords an analytical tool that enables a synthesis of the elements called for in projecting the supply and demand (including import demand) for the agricultural commodities under study under one consistent system.

The scope, therefore, of this final report is an ultimate synthesis of all findings and conclusions of the research study, and the presentation thereof in summary form.

1/ U.S. Dept. Agr., Foreign Agricultural Service Section 104 (a): "Project Statement for Long-term Projections of Supply and Demand for Selected Agricultural Products in the Philippines". (Typewritten, dated December 17, 1958.)

Even within its strictly specified objectives, the research undertaken enables important conclusions to be reached regarding the Philippine economy which, should they be deemed acceptable, might be of value to the economic planners of the country.

RESUME OF FINDINGS AND CONCLUSIONS

The Projection Model

The ultimate objective of the study is to obtain national projections to 1965 and 1975 of the import demand in the Philippines for eight selected agricultural commodities. To this end, total demand (final and intermediate) and domestic production for each commodity were projected. Based on the accounting relationship that total demand equals total supply, the difference between total demand and domestic production gave estimates of import demand for each of the commodities under particular consideration (assuming, of course, that there were no stock depletions, as has been assumed for some commodities).

To facilitate the integration of the projections of demand with those of domestic production, an interindustry analysis of 39 sectors of the Philippine economy was made. Given projections of final demand for domestically produced final goods (as distinguished from imported final goods), an inverted matrix of input coefficients, and other parameters, estimates of domestic production requirements were obtained. The requirements were then matched against constraints, these latter determined by independent projections of domestic production based on availability of the major factor requirements for production.

Two other major constraints are imposed: first, the aggregate import requirements obtained for final goods as well as intermediate goods should not exceed the country's overall capacity to import; and second, the aggregate investment requirements for domestic production as obtained on the basis of assumed capital-output ratios should be within the capabilities of the economy to generate locally or borrow from abroad.

Long-Run Growth and Changes: The Philippine Economy, 1965 and 1975

Population Growth

The Philippine population will increase annually by about 3.06 percent from 1960 to 1965, about 3.21 percent from 1965 to 1970, and about 3.34 percent from 1970 to 1975. On this basis, population will be about 32,252,300 in mid-1965 and 44,505,500 in mid-1975. The population has been projected by applying the United Nations "component method." While it is difficult to indicate, historically, that the rate of population growth will continue to increase, it is felt that the rate of growth will not level off until after the present generation (that is, 20 or so years).

The assumptions of the projections yield conservative estimates of future population. A constant sex-age adjusted birth rate and an increase of life expectancy at birth of 2.5 years for every 5-year period were assumed. From 1960-1965, life expectancy at birth was assumed at 47.5 years.

By 1965, approximately 32 percent of the population will be urban and 68 percent rural. In 1975 about 34 percent will be urban and 66 percent rural. Rural areas include rural portions of chartered cities and provincial capitols. Urban areas include the Metropolitan Manila area, poblaciones, and urban portions (about 60 percent) of chartered cities and provincial capitols.

It is estimated that there will be about 5,339,000 households by mid-1965; and about 7,158,000 by mid-1975. Distribution of households into urban and rural areas will be determined partly by the larger household sizes found in urban areas.

Growth of Per Capita Gross Product

Considerations and judgments based on an examination of the observed growth of the Philippine economy during the last decade, and of the various causative factors of that growth, indicate that the future rates of growth of the per capita gross domestic product that can be attained feasibly are (a) about 1.5 percent annually from 1959 to 1965 and (b) a little more than 2 percent yearly from 1965 to 1975. These imply annual rates of growth of the aggregate gross domestic production of 4.57 percent from 1959 to 1965 and 5.24 percent from 1965 to 1975.

For 1965, the rate of growth postulated for per capita gross domestic product from 1959 is based on the following premises:

a. The incremental capital-output ratio (aggregate) is assumed at about 1.9 in 1965, compared with 1.47 from 1950 to 1959. This further implies that the investments that would be required and sustained should average about P1,224 million (in constant 1956 prices) annually during the period 1959-1965, or approximately 8.6 percent of the average annual gross domestic product for that period (in this report, P before a figure stands for Philippine pesos). The investment coefficient (8.6 percent) is almost equal to the average investment coefficient for the period 1950-1959 of 8.65 percent of the average annual total gross domestic product for that period.

b. Of the total domestic capital formation from 1959 to 1965, approximately 16.5 percent will consist of foreign investments (net) in the domestic economy-a percentage less than that for the period 1950 to 1959, when foreign investments constituted about 25.03 percent of gross domestic investments in the Philippines. The decline in net foreign long-term capital inflow (including donations, such as capital equipment obtained under the U.S. economic aid or ICA program), as a percentage of future gross domestic investments, follows from two premises. (1) The gross long-term foreign capital inflow will be $1 billion from 1959 to 1975; and the approximate net inflow of capital will be about $17 million yearly from 1959 to 1965 and about $28 million yearly from 1965 to 1975. The $1 billion long-term loans, which will consist partly of reparation payments, can be absorbed economically by the Philippine economy without seriously straining resources called for by the amortization and interest payments. (2) The transition to full decontrol of foreign exchange may stimulate exports but may also result in the decline of U.S. Government expenditures which now represent a significant source of foreign receipts.

For 1975, the rate of growth of per capita product postulated at 2 percent per annum from 1965 to 1975 (or about 5.24 percent annually in aggregate gross domestic product from 1959 to 1975) has the following underlying assumptions:

a. The incremental capital-output ratio will be 2:1; and the investment requirements will move the investment coefficient to 10.8 percent of gross domestic product in 1975.

b. The gross domestic investment from 1959 to 1975 will average about P2,666 million annually (in constant 1956 prices). Domestic savings are assumed to account for the greater part of capital formation, so the average contribution of foreign investments will be only about 2.7 percent of gross domestic investment by 1975.

The projections to 1965 depart from existing government programs, since historically such programs have never fully been implemented. Adoption of the government (National Economic Council) program 2/ and assuming its full implementation, would result in a rate of growth from 1959 to 1965 faster than that postulated in this study. However, some of the assumptions of government programs, one of which is primarily the continuation of historical trends, may not be basically sound. It is expected that conditions in the future are likely to change, if only by virtue of the growth process itself.

On the general basis of the foregoing hypotheses, aggregate gross domestic product by 1965 will reach about P14.246 billion, and by 1975 about P24.675 billion, the data of both years being in constant 1956 prices. Assuming, further, that the terms of trade will be neutral in both future years and that net inflow of foreign capital will be P34 million (=$17 million 3/) in 1965 and P56 million (=$28 million 3/) in 1975, the total gross income 4/ in 1965 will reach P14.28 billion, and in 1975 about P24.731 billion. The marginal rate of personal consumption expenditures in relation to gross income has been assumed as constant, although it is conceivable that the former may decline in relation to the latter 5/.

Aggregate personal income will constitute some fixed function of aggregate gross income-that is,

$$Y_p = a + b\,(Y_g)$$

$$= 0.844\,(Y_g) - 9.255$$

where Y_p is aggregate personal income (including taxes) and Y_g is aggregate gross incomes.

Given assumptions about the distribution of personal income by urban-rural classifications, together with a similar distribution of the population and of households, estimates of the average personal income of households by urban-rural areas were then derived. Th household income levels then obtained were used to determine the household consumption c the selected agricultural commodities.

Demand Projections for the Selected Agricultural Commodities

The final household demand for each of the selected agricultural commodities was ob-

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2/ Now being prepared to cover the fiscal year up to 1966.

3/ The exchange rate has been fixed at P2 to $1, which was the prevailing rate of 1956. However, 1956 prices have been used throughout the projections.

4/ Gross income is defined as the total available sources of funds so that it is equal to total available goods and services if the net inflow of foreign capital is zero.

5/ It is also possible to alter (say, lower) the marginal propensity to consume, by forced savings or by import controls.

tained on the basis of logarithmic demand functions of the form:

$$\log C_i = a + b \log Y + c \log H,$$

where C_i is the quantity of commodity i consumed by households, Y is household income (in cash and in kind) and H is household size. Households were classified according to urban-rural areas, and a demand analysis carried out for each urban-rural subdivision of households.

Data were gathered from a nationwide sample survey which included 1,471 households. The survey, begun on March 15, 1960, and ended on December 15, 1960, was de signed to cover some 6 to 7 primary sample sites every month. The survey appeared to yield good estimates, particularly with respect to household income, when checked against the results of a larger survey (in terms of size of sample) conducted in 1957 by the Philippine Statistical Survey of Households.

The income elasticities obtained vary significantly between commodities. The algebraic sign of the income elasticities for some of the commodities conformed with general expectations: income elasticities for rice were small and negative in rural areas; for corn as food, the income elasticities were negative; for canned whole milk products, the income elasticities were high (more than 1), except for households in rural areas. The income elasticities (as well as the elasticities of household sizes) were given without their standard errors on the premise that, in a regression analysis of nonexperimental data such as that derived from a relatively small household budget survey, the standard errors carry little weight as significant indicators. The main criterion in evaluating the reliability of results lies in the regularity and consistency established by comparing the estimated elasticities for different consumption items, different urban-rural sectors and the like.

Projections of the levels of household consumption (in quantity terms) of the eight selected agricultural commodities in 1965 and 1975 indicate the following levels of growth:

Commodity	Index of Quantity Consumed by Households		
	1960	1965	1975
1. Rice	100.00	113.06	149.7
2. Corn	100.00	113.56	149.6
3. Wheat and Wheat Flour	100.00	166.54	261.0
4. Meat and Meat Products	100.00	120.12	180.4
5. Dairy Products	100.00	117.69	188.4
6. Cotton	100.00	136.08	208.7
7. Tobacco	100.00	125.09	188.6
8. Tallow	100.00	127.50	150.3

The consumption demand for commodities produced by other sectors included in the interindustry analysis was projected not on the basis of income elasticities but by applying proportions prevailing during the base year (1956). This procedure, however, tends to underestimate the demand for important nonfood items which utilize some of the agricultural commodities studied.

Other final demand (exports and stock additions) was projected on the primary basis of 1956 proportions (for which year data are available).

The proportions of final demand that would be filled by domestic production and that would have to be imported were determined on the basis of hypotheses concerning the extent of import substitution possible, given possible levels of domestic production, investments, and capacity to import.

Intermediate Demand

The intermediate demand for the selected agricultural commodities was essentially derived from the interindustry analysis, which entailed calculation of industrial transaction in goods and services for 1965 and 1975.

On the basis of import substitution possibilities involving individual sectors, the ratio between domestically produced and imported intermediate products used as inputs (for instance, raw cotton used by cotton textile mills) was altered from that of the base year. The feasibility of import substitution has been studied on an ad hoc basis, with the primary constraint that the resultant overall domestic production would not exceed the aggregate gross domestic product projected, and the resulting increase in investment requirement would not exceed the initial investment projections. To a certain degree, import substitution will relieve pressures on the capacity to import, so that the absolute level of imports in the final projections would be less than if there were no import substitution.

Supply Projections for the Selected Agricultural Commodities

By means of the coefficients of direct and indirect requirements per unit of final demand computed from the interindustry table, the projections of final demand for the selected commodities (as well as others) were used to determine domestic production requirements (and given these, intermediate demand for products used as inputs was derived by using fixed input coefficients, as mentioned above).

The next task was to see whether the domestic production requirements could be met. Feasible levels of domestic production of each of the selected agricultural commodities were investigated individually. Due consideration was given to: known technology and developments thereof; known resources; cost structures; and other factors that affect domestic production. In the particular case of agricultural production, consideration and judgments involving expansion of area planted and yields per hectare, for the particular commodities, were brought into play. The prospects of relevant industries were further examined in order to arrive at conclusions involving growth in the industrial processing of the agricultural products under specific consideration.

For some of the commodities, however, the data limitations have barred extensive studies and independent projections, and it has been possible only to assess whether domestic production requirements can be met. In these cases, the procedure is retrogressive: given domestic production requirements, requirements on acreage and on yields are examined. For instance, given the domestic production requirements for Virginia leaf tobacco, the acreage requirements are estimated holding yield constant. If acreage requirements appear capable of being fulfilled, an immediate conclusion can be drawn: namely that the domestic production requirements can be met. Furthermore, if yields can be expected to increase, acreage requirements can be reduced.

The capacity of the economy to produce some of the commodities exceeds domestic production requirements. However, it has been generally assumed that even if the capacity of domestic production is more than adequate, actual future production will be about equal to production requirements.

Import Demand

The end product of the study is a series of "sector balances"[6]. A "sector balance", or supply-demand balance, has been constructed for each of the commodities under particular study. It may be expressed as:

$$\text{Total Supply} = S = X_i + M_i + \Delta S_i$$

$$\text{Total Demand} = D = \text{Final Demand} + \text{Intermediate Demand}$$

$$= (C_i + E_i + G_i + I_i) + (X_{i1} + X_{i2} + \text{--}X_{in})$$

and X_i is domestic production of commodity i; M_i is imports of the commodity; ΔS_i, reduction in stocks; C_i, household consumption; G_i, government consumption; I_i, investment use of the commodity; E_i, exports; and X_{in}, the intermediate demand for commodity i by sector n. Total Supply is equal to Total Demand (that is, $S = D$).

The summary of the 1965 supply-demand balance for each commodity is shown in Table A-1. Table A-2 contains the summary balance for 1975.

The projected import demand, to 1965 and 1975, indicates significant shifts in the forms of some of the commodities. For some (rice, corn and tobacco), future import demand is zero. There will be a shift in the imports of wheat, from flour to grain; of meat and meat products, from canned products to fresh/frozen meat and to live animals for food (Tables B-1 and B-2).

Future imports of the selected agricultural commodities have been aggregated to provide a rough indication of magnitudes, as follows:

	Imports of Selected Agricultural Commodities			
	1956	1960	1965*	1975*
	(In Thousands)			
F.O.B. value, in 1956 prices (pesos)	201,060	176,250	201,500	198,900
Quantity, in metric tons	549.68	597.16	594.4	966.5

*Five agricultural commodities: wheat, meat and meat products, dairy products, cotton,and tallow.

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[6] See Appendix Tables A and B of this report.

Table A-1. -- Supply-Demand Balances for Selected Agricultural Commodities, 1965

(In Thousand Metric Tons)

Demand/Supply	Rice (Milled)	Corn (Shelled)	Wheat		Meat and Meat Products			Dairy Products	Tobacco		Cotton		Tallow
			Flour	Grain	Live-stock	Fresh/ Frozen	Processed/ Canned		Virginia	Native	Raw	Cotton Products	
DEMAND													
Final Demand:													
Household	2,373.43	87.83	2.18	-	204.89	170.66	12.05	334.49	-	5.24	-	42.38	-
Other	15.34	10.51	3.26	-	-	0.14	-	4.40	16.49	10.71	-	-	-
Total	2,388.77	98.34	5.44	-	204.89	170.80	12.05	338.89	16.49	15.95	-	42.38	-
Intermediate Demand	38.51	1,348.71	229.50	326.30	170.80	10.07	-	-	22.79	8.73	39.48	1.48	7.86
Total Demand	2,427.28	1,447.05	234.94	326.30	375.69	180.87	12.05	338.89	39.28	24.68	39.48	43.86	7.86
SUPPLY													
Domestic Production	2,427.28	1,447.05	234.94	-	370.41	173.83	8.90	136.60	39.28	24.68	1.36	39.47	-
Imports	-	-	-	326.30	5.28	7.04	3.15	202.29	-	-	38.12	4.39	7.86
Stock Depletion	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Supply	2,427.28	1,447.05	234.94	326.30	375.69	180.87	12.05	338.89	39.28	24.68	39.48	43.86	7.86

Table A-2. -- Supply-Demand Balances for Selected Agricultural Commodities, 1975

(In Thousand Metric Tons)

Demand/Supply	Rice (Milled)	Corn (Shelled)	Wheat		Meat and Meat Products			Dairy Products	Tobacco		Cotton		Tallow
			Flour	Grain	Live-stock	Fresh/ Frozen	Processed/ Canned		Virginia	Native	Raw	Cotton Products	
DEMAND													
Final Demand:													
Household	3,290.74	135.49	3.43	-	307.80	256.38	18.10	535.55	-	8.10	-	64.97	-
Other	108.02	36.23	21.42	-	-	0.18	2.01	0.40	25.44	14.52	-	-	-
Total	3,398.76	171.72	24.85	-	307.80	256.56	20.11	535.95	25.44	22.62	-	64.97	-
Intermediate Demand	66.43	1,811.58	360.56	535.30	256.56	22.16	-	-	33.91	13.19	68.45	3.48	10.26
Total Demand	3,465.19	1,983.30	385.41	535.30	564.36	278.72	20.11	535.95	59.35	35.81	68.45	68.45	10.26
SUPPLY													
Domestic Production	3,465.19	1,983.30	385.41	-	554.71	269.68	20.11	199.30	59.35	35.81	2.87	68.45	-
Imports	-	-	-	535.30	9.65	9.04	-	336.65	-	-	65.58	-	10.26
Stock Depletion	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Supply	3,465.19	1,983.30	385.41	535.30	564.36	278.72	20.11	535.95	59.35	35.81	68.45	68.45	10.26

Table B-1. - Imports of Eight Agricultural Commodities, 1956 and 1960; and Projections of Import Demand, 1965 and 1975

(In Value Terms, F.O.B. Prices, In Thousand Pesos)

Commodity	1956*	1960*	1965**	1975**
1. Rice (Milled)	6,976	a/	-	-
2. Corn (Shelled)	3	a/	-	-
3. Wheat:				
Flour	47,203	27,979	-	-
Grain	-	16,001	33,307	52,411
4. Meat and Meat Products:				
Livestock	1,383	786	2,224	4,069
Fresh/Chilled/Frozen	4,411	1,190	6,148	8,112
Processed/Canned	12,666	10,986	7,424	-
5. Dairy Products	53,054	49,649	49,750	79,680
6. Tobacco:				
Leaf	10,510	910	-	-
Cigarettes	738	110	-	-
7. Cotton:				
Raw	7,148	34,151	30,916	51,501
Cotton Products	54,763	32,568	69,301	-
8. Tallow	2,210	1,915	2,428	3,131

a/ Less than 1,000 pesos.
* At current prices.
** In 1956 prices.

Table B-2. - Imports of Eight Agricultural Commodities, 1956 and 1960; and Projections of Import Demand, 1965 and 1975

(In Quantity Terms, In Thousand Metric Tons)

Commodity	1956	1960	1965	1975
1. Rice (Milled)	42.40	xxx	-	-
2. Corn (Shelled)	0.04	xxx	-	-
3. Wheat:				
Flour	215.10	161.77	-	-
Grain	-	82.60	326.30	535.30
4. Meat and Meat Products:				
Livestock	1.46	0.54	5.28	9.65
Fresh/Chilled/Frozen	5.43	0.84	7.04	9.04
Processed/Canned	12.43	9.48	3.15	-
5. Dairy Products	234.30	297.03	202.29	336.65
6. Tobacco:				
Leaf	3.27	0.30	-	-
Cigarettes	0.09	0.01	-	-
7. Cotton:				
Raw	4.82	31.40	38.12	65.58
Cotton Products a/	24.51	6.65	4.39	-
8. Tallow	5.83	6.54	7.86	10.26

xxx Less than .01 metric ton.
a/ All in raw cotton equivalent.

Source: Table A.

I. FRAMEWORK OF THE ANALYSES AND PROJECTIONS

Since the project study involves long-term projections of the supply of and demand for specified agricultural commodities, the investigation of basic economic factors that determine levels of demand and supply has become an integral part of the study. In addition, the study also calls for a workable projection model that will permit ready revision of the projections themselves through adjustments of underlying assumptions that may become necessary due to new developments.

While the fundamental objective of the study centers on projections of import demand, the economic forces or relationships that affect import demand (for the selected commodities) are usually complex and interrelated in varying degrees. A serious task of the study is the formulation of a respectable projection model which integrates the various aspects and economic relationships covered by the study.

The national projection of the import demand of the Philippines for selected agricultural commodities by 1965 and 1975 involved long-term projection of: (1) The Philippine economy (population, gross product, and the like), (2) aggregate demand for the selected agricultural commodities, and (3) domestic production of the commodities. The integration of these various aspects of the investigation, to form a complete logical system and to obtain projections of import demand (the final goal of the study) consistent with that system, has been considered an objective as essential as the inquiry regarding each of the separate tasks of projecting demand for the selected agricultural commodities, of projecting their domestic production, and of preparing projections of basic economic variables.

It should thus be borne in mind that the evaluation of the import demand for each of the selected agricultural commodities has been formulated not only with the aid of a specific methodology but also under a specific set of assumptions regarding the important variables which were deemed to have relevant bearing on the problem. In consequence, final assessment of the worth of the project should place equal emphasis on the efforts to provide a projection model through which the present assessment of the particular problem (of import demand) in question can be revised readily by adjustments of the assumptions.

A. The General Approach

For the purpose of facilitating evaluation of the findings of this study, it seems advisable to provide at the outset an outline of the methodology adopted. The point of departure of the study is the feasible rate of growth of per capita gross domestic product, and the terminal point is the estimation of import demand for selected agricultural commodities. Between these two points, there has been built a series of theoretical and empirical bridges over which the analyses move forward in successive stages.

The projection model also rests on certain assumptions which are believed reasonable on the basis of general knowledge and judgments concerning the broad direction of developments in the economy.

The specific methods followed in the present study are as follows:

1. The projection commences with the preliminary analyses and projections of the possible rates of growth of per capita gross domestic product.

In the preliminary analyses, an attempt is made to identify the significant factors that have contributed to the growth of per capita product and to isolate those factors that are likely to have bearing on future income growth. Observations on the rate of growth in per capita gross product (in terms of 1956 prices) indicate variations through time: the average rate of growth from 1958 to 1959 has been 3.34 percent per year, and from 1956 to 1959, about 1.59 percent per year.

The growth in gross product and in gross income has been due to increases in capital stock, favorable terms of trade during certain years, the inflow of foreign capital, and the like.

Most of the above-mentioned variables that contribute to income growth are interrelated in the manner of the economic circular flow. Analyses of these variables have been made and conclusions reached, or at least feasible assumptions made, regarding their future development. On the basis of the analyses, reasonable hypotheses are forwarded regarding possible rates of growth of per capita income to 1965 and 1975.

Given reasonable hypotheses on possible rates of growth of per capita income in the Philippines, it is possible to deduce the effects which such growth may have on the composition of demand for consumer goods, as well as the requirements such demand may imply for production, investments, productive capacity and the level of import demand.

2. Thus, given the preliminary hypotheses covering future income levels, the volume and composition of the future demand for consumer goods are derived with the application of demand elasticities. In determining the level of demand for the eight selected agricultural commodities, extensive use was made of demand elasticities obtained for the commodities under particular consideration. These demand elasticities have been computed on the basis of a household budget survey conducted particularly for this project study.

To derive the income-demand relationships for the other consumer goods not covered by the particular survey, a general study was made of trends in food and nonfood consumption on the basis of available data.[7] However, these projections of consumer demand were not considered final until a thorough examination could be made of the national effort necessary to sustain such growth in demand (and in income).

3. To assess the ability of the Philippine economy to achieve the levels of income and demand projected on the bases of reasonable hypotheses regarding future rates of growth in per capita income, consideration is taken of (a) the country's future capacity to import, and (b) the possible levels of investments required to expand productive capacity.

In examining the future capacity to import, the possible contribution to income from the volume of exports is evaluated by examining the world demand for the exportable products of the country as well as the prospects of expanding domestic production of these export commodities. Given the limitations for the expansion of exports and, consequently, the growth in the country's overall capacity to import, import substitution requirements and possibilities are determined.

7/ The 1957 Survey of Family Income and Expenditures conducted by the Philippine Statistical Survey of Households.

Estimates are then prepared regarding the necessary increments in domestic production and the productive capacity of the main sectors of the economy. These required additions to production and productive capacity are then assessed in terms of the expected availabilities of raw materials and other intermediate goods, of services, and of capital goods (met partly from domestic production and partly from imports).

Detailed examination is then made of the possible investments and the growth of productive capacity on the basis of an analysis of investment coefficients and modifications of the capital-output ratio.

4. Given the analyses and projections of demand for final goods, including the final demand for the agricultural commodities under particular study, the next task is to determine the production levels required to meet such demand. The integration between the demand for final goods and the required level of production is facilitated by research into interindustrial relationships, which yields estimates of the production needs (direct and indirect) per unit of final demand.

5. When the aggregate production needs are finally compared with projections of the capacity to import, the limitations on the supply of goods from foreign sources is estimated. It is possible, then, to measure the import substitution called for by the projected rate of development and to evaluate the overall feasibility of the projected economic structure and the modifications that are called for in its attainment.

6. Within the context of the overall projection model, a detailed study of the supply of and demand for the eight agricultural commodities is made. At the same time, the input-output analysis provides a systematic framework within which the supply and demand for the commodities under specific study can be projected in a manner consistent with the other sectors of the Philippine economy.

The approach outlined above indicates a departure from the approach proposed in the progress reports previously submitted. In this previous approach the total output or income of the Philippine economy was proposed to be projected on the basis of estimated levels of product per worker. This approach involved the projection of the population, estimation of the size of the labor force and employment, and assumptions about the industrial distribution of the employed labor force (based on industrial patterns by urban-rural sectors and for the country as a whole). Then, given product per worker, the national output was estimated for 1965 and 1975. This type of approach roughly approximated methods used for projecting the U.S. economy 8/ and Canada 9/. Upon further consideration, however, such a procedure might not be applicable for the purpose of preparing sound projections of the Philippine economy. They key variables to this method or the "underpinnings" of the projections, were the estimated products per worker in 1965 and 1975, available data for which could not be obtained with some measure of respectability. Moreover, the procedure proposed originally did not afford a means of bridging the gap between the projected demand for the selected agricultural commodities and their projected supply (from domestic production and/or imports).

8/ Gerard Colm, The American Economy in 1960, National Planning Commission, Washington, D.C., 1952.

9/ See Simon Kuznets, "Canada's Economic Prospects" (A Review Article), The American Economic Review, Vol. XLIX, No. 3, pp. 361-365. Professor Kuznets presents a critique of the Royal Commission on Canada's Economic Prospects, Final Report (and supporting Monographs).

The alternative approach, therefore, that has been adopted appears more practicable and sound, even if more elaborate. It provides for feasible construction of a projection model, within the framework of which revisions or adjustments may readily be made in the light of new developments in the entire economy or in specific sectors thereof or in the supply of and demand for the selected agricultural commodities under consideration. There is also a precedent for the method: the approach resembles that used by the Economic Commission for Latin America in projecting the growth of the Colombian economy 10/.

B. Basic Concepts Used

Gross domestic product.--The growth of the Philippine economy will be measured in terms of gross domestic product. This is a different type of measurement from that of gross national product (which is more often used as the indicator of a country's aggregate output during a particular period).

The concept of the gross domestic product is used to measure the total output within a given geographic area, irrespective of whether the productive resources are owned by the nationals of that area or not. The frame of reference of the gross domestic product is, therefore, the production occurring within a geographic area, and omits from consideration any foreign property held by nationals of the country under consideration. While gross domestic product focuses on the productive activity taking place within designated boundaries, the gross national product measures the productive capacity of a specific group of individuals (nationals) and their properties. Other than this difference in coverage, the two concepts are the same.

In the case of the Philippines, the gross domestic product is larger than the gross national product since many of the major resources of productive activity in this country are owned and operated by nationals of other countries. In more advanced countries, the gross domestic product is smaller than gross national product for the reason that many nationals of such countries have large foreign investments so that the country's net property income from abroad is substantial (and hence, the gross national product type of measurement is used).

The advantage of using the gross domestic product concept in the particular case of the Philippine economy is that it isolates the incomes deriving from productive resources existing in the country from income accruing from external sources.

In the more specific terms of physical volumes or real incomes, the aggregate gross domestic product is derived by adding to gross national product the remittances of profits abroad and deducting the terms of trade effects in relation to the base year. All existing data on the national income accounts, which are in terms of gross national product, have been adjusted in terms of gross domestic product.

Input-output analysis.--A 39-by-39 input-output table has been constructed for the Philippine economy and applied to integrate projections of the final demand for the selected agricultural commodities (as well as other commodities) with the corresponding

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10/ Economic Commission for Latin America, Analyses and Projections of Economic Development (III): The Economic Development of Colombia. United Nations, Department of Economic and Social Affairs, Geneva, 1957.

supply requirement (either from domestic production or from imports), as well as to evaluate the feasibility of the rate of growth postulated for the Philippine economy (on the basis of the performance of the various industrial sectors under specified conditions).

The main features of the general input-output table as constructed are as follows:

1. Basis.--The mathematical basis of the model is:

$$
\begin{array}{ll}
(1.1) & X_1 - x_{11} - x_{12} \; . \; . \; . \; . \; x_{1n} = Y_1 \\
(1.2) & X_2 - x_{21} - x_{22} \; . \; . \; . \; . \; x_{2n} = Y_2 \\
 & \vdots \qquad\qquad\qquad\qquad\qquad\quad \vdots \\
(1.n) & X_n - x_{n1} - x_{n2} \; . \; . \; . \; . \; x_{nn} = Y_n,
\end{array}
$$

where (X_1, X_2 . . . X_n) are the gross outputs of each of the specified economic sectors included in the model; x_{ij} (i, j, = 1.2...n) are the actual flows of goods and services from producing sectors i to the consuming sectors j; and Y_i (i = 1 ... n) are the flows to the final demand sectors, which ordinarily include households, investments, government, foreign trade and inventory change.

There is a linear relationship between the purchases (x_{ij}) of an endogenous sector (i.e., the goods/services purchases from sector i by sector j) and the total output of sector j (i.e., x_j), so that:

$$(2) \qquad x_{ij} = a_{ij}\, x_j + c_{ij}$$

where a_{ij} and c_{ij} are parameters. The a_{ij} is usually called the input-output ratio or the technological coefficient, and is obtained from a single observation of the ratio between x_{ij} and X_j. Thus:

$$(3) \qquad a_{ij} = \frac{x_{ij}}{X_j} = x_{ij}\, X_n^{-1}$$

The input-output ratio (a_{ij}) represents the direct requirement of sector j from sector i, per unit of output of sector j. For instance, if the foodstuff manufacturing industry purchased P7 million worth of products from agriculture, and the total output of the foodstuff industry is P32.3 million, then the input-output coefficient is 7/32.3 or 0.216719. Thus for every 1-peso output in foodstuff manufacturing, 0.22 peso worth of input from agriculture is required.

"Assuming that $C_{ii} = 0$ (as is usually done in empirical work), and substituting equation (2) into equations (1.1) to (1.n), then:"

$$
\begin{array}{ll}
(4.1) & X_1 - a_{11}X_1 - a_{12}X_2 \; . \; . \; . \; a_{1n}X_n = Y_1 \\
(4.2) & X_2 - a_{21}X_1 - a_{22}X_2 \; . \; . \; . \; a_{2n}X_n = Y_2 \\
 & \vdots \\
(4.n) & X_n - a_{n1}X_1 - a_{n2}X_2 - a_{nn}X_n = Y_n
\end{array}
$$

The general input-output table then takes the form as shown in equation 4.1. In matrix notation, this becomes:

$X - AX = Y$, where X is a vector of sector outputs, A is a matrix of input-output ratios, and Y is a vector of final demand quantities.

With specified final demands ($Y_1, Y_2 \ldots Y_n$), and constant input-output coefficients, the outputs $X_1, X_2 \ldots X_n$ can be solved, by inverting equations (4.1) to (4.n).

The resulting equations are:

$$
\begin{array}{ll}
(5.1) & X_1 = A_{11}Y_1 + A_{12}Y_2 \ldots + A_{1n}Y_n \\
(5.2) & X_2 = A_{21}Y_1 + A_{22}Y_2 \ldots + A_{2n}Y_n \\
 & \vdots \qquad\qquad\qquad\qquad\qquad \vdots \\
(5.n) & X_n = A_{n1}Y_1 + A_{n2}Y_2 \ldots + A_{nn}Y_n
\end{array}
$$

where the Aij's (known as the interdependency coefficients) are elements of the inverse matrix $(I-A)^{-1}$.

Since Aij represents the direct and indirect requirements upon sector i for one unit change in the amount of goods delivered to final demand by industry j, then the appropriate interindustry relationships can be established (quantified).

2. Projections by means of the input-output approach.--In preparing projections, three main elements are required: (a) Specification of the final demand of the economy for the desired year in appropriate sectoral (industry) detail; (b) A matrix of input-output coefficients (and other parameters of the model); (c) A set of constraints on the availability of particular primary factors required in production.

In its original form, input-output analysis tended to be rigid because of the input coefficients which were derived primarily from historical relationships. But changes can be introduced into the historical relationships and in the present study changes have been introduced by allowing for changes in the proportion of imports, that is, through import substitution.

Demand.--This study is concerned with both final demand and intermediate demand. The final demand for a commodity refers to the consumption of finished goods, that is, of goods not devoted to further production 11/; and is projected on the basis of the levels of income and population prognosticated for 1965 and 1975. Household consumption demand generally comprises most of final demand. The second largest component of final demand in the Philippines is exports; and projections thereof entail a separate study of the market for each commodity.

11/ Technically, final demand comprises that part of total supply or output of each commodity which is allocated outside the industrial sectors of the economy. It encompasses all demand which is not accounted for through the input requirements computed from the given set of input coefficients. See Wassily Leontief, "Some Basic Problems of Structural Analysis."

Intermediate demand on the other hand, consists of goods purchased by one industry from other industries for further production or processing.

By definition, final demand plus intermediate demand constitutes total demand.

Supply. -- Total supply is defined as the sum of domestic production, imports, and stock depletions. By an accounting identity, total supply is equal to total demand.

Projections of domestic production of a commodity, which are consistent with other sectors, are arrived at in a series of successive approximations. Initially, the amount of domestic production is determined from an estimate of the final demand for domestically produced goods, assuming that imports have a constant relationship to total final demand (and, also, as a first approximation, the proportion of imported inputs to total inputs in any one sector is held constant from the base year). Then, (1) the total import requirements by sector are summed up and compared with the capacity of the Philippine economy to import (that is: with the total availability of foreign exchange); and (2) a similar comparison is undertaken to see whether investment requirements by sector when added up exceed (or are below) the investments expected to be available from domestic (public and private) and from foreign sources. If the requirements for imports and investments are immediately just reached, then the projections of domestic production are consistent. If, however, the investment requirements fall short of the available resources and import requirements exceed the capacity to import (or foreign exchange available), domestic production can be raised because additional investment is available and there is an incentive to expand domestic production. If the limits of the available sources , both of foreign exchange and investments, have been reached, however, domestic production must be reduced unless means are found to economize on both investments and imports in the process of production.

For the selected agricultural commodities under particular consideration, the domestic production requirements derived through the interindustry analysis are further examined as to the feasibility of their being fulfilled, given domestic resources, prevailing technology and the like.

Sector balances. --In the final analysis, a sector balance is constructed for the selected commodities under specific consideration (as well as for other commodities and sectors). The supply-demand balance may be expressed as:

$$\underbrace{X_i + M_i + \Delta S_i}_{\text{(Total Demand)}} = \underbrace{C_i + E_i + G_i + I_i}_{\text{(Final Demand)}} + \underbrace{X_{i1} + X_{i2} + \ . \quad . \quad X_{in}}_{\text{(Intermediate Demand)}}$$

where X_i is domestic production of commodity i; M_i is imports of the commodity; ΔS_i, reduction in stocks; C_i household consumption; G_i, government consumption; I_i, investment use; E_i, exports; and X_{in}, intermediate demand for commodity i by sector n.

If the terms of the sector balances are expressed in terms of current prices, the balancing variable is price; so if the volume of supply is larger than the demand, prices decline and a balance is achieved.

For the purposes of the present study, however, prices have been held constant (1956); so that the analyses are really in quantum terms, and the balancing items are imports and stock depletion.

Import demand.--In the input-output analysis, estimates of the levels of production and imports in all sectors are determined simultaneously. The interindustry table prepared as part of this study also indicates the ratio of domestic production to total supply in each sector. Since total demand is equal to total supply, and since imports plus domestic production = total supply (assuming no stock depletion), then imports of each commodity can be readily determined.

Thus, let the ratio of domestic production, to total supply be:

$$d = \frac{X}{X+M},$$

where X is gross domestic production and M is imports. For any one sector,

$$X_i = d_i (Y_i + a_{ij}X_n),$$

where Y_i is total final demand for commodities in sector i, and a_{ij} is the input-output coefficient. Since imports (M) + production (X) is equal to total demand (Y), then imports for sector i is given by:

$$M_i = m_i (Y_i + a_{ij}X_n), \text{ where } m_i = \frac{Mi}{Xi + Mi}.$$

In the projections, m_i is assumed to vary from that of the base year, on the basis of judgments concerning each sector i.

The study ultimately centers on the imports of the selected commodities in their agricultural form. Since the final demand for most of the commodities is in terms of processed products (made from the commodities) rather than of raw agricultural commodities, it is necessary to construct a series of sector balances for each commodity. These sector balances trace the processing of the commodity from one sector to the other. Thus, for rice, there is a sector balance for rough rice (palay) as well as for milled rice; and for wheat, a sector balance for bakery products, as well as separate sector balances for wheat flour and wheat grain.

This procedure, however, limits the extent to which the input-output analysis may be applied. In the first place, the interindustry table has been constructed on the basis of available sectoral data which are not necessarily classified strictly according to the sectors producing or consuming the eight agricultural commodities. For instance, in the table (see Table A, B, C or D) there is a sector for "Other Grain Mill Products" as given by available data 12/, which includes not only wheat flour milling but also cassava flour milling; a sector for livestock, poultry, and dairy which includes an agglomeration of meat and dairy products (including eggs) generally consumed on the farm and some of which go into slaughter houses (livestock). Secondly, the interindustry analysis is in terms of value of constant (1956) prices; and the estimates of accounting prices that have been used are subject to some error.

Even while the interindustry model has its built-in limitations, however, it has been extremely useful in providing a fairly workable framework for the entire analysis.

12/ The 1956 Survey of Manufactures, which includes detailed data on manufacturing establishments with 20 or more workers; and the 1956 Crop and Livestock Survey.

II. LONG-RUN GROWTH AND STRUCTURE OF THE PHILIPPINE ECONOMY

To establish sound bases for projecting demand of and supply for the selected agricultural commodities, a realistic appraisal of the fundamental trends in the growth and the structure of the Philippine economy is indispensable. After feasible projections of the basic long-run trends have been formulated, their particular implications for the commodities under specific consideration are determined systematically.

A. Basic Trends and Relationships, and Basic Assumptions for Projections of Growth and Structure

In view of the shortness of the period available for analysis of the Philippine economy (as well as of other important factors) which would tend to put conclusive projections on precarious grounds, it was felt advisable not to attempt to prepare any conclusive projection of the economy but instead to identify the limits within which its future rate of growth might fluctuate. Within the limits set for the future rate of growth of the economy, an attempt was made to quantify the more important features of the economy in 1965 and 1975 that will have bearing on the ultimate aim of the project of assessing the demand of and supply for the eight selected agricultural commodities. Because of the extent of foreign capital in the country and the important role that the external sector generally plays in the country's economic development, it has become convenient to take explicit consideration of the Gross Domestic Product rather than Gross National Product. In terms of physical volumes, the difference between the two is the remittances of profits abroad minus the terms-of-trade effect in relation to the base year. The terms-of-trade effect represents income flows into the economy not through the net increase of the physical volume of exports over imports but through net increases in the price of exports over that of imports. Thus, for purposes of this study, the key variable taken as the best indicator of economic growth is the rate of increase of per capita gross product, which indicates the rate at which production in the country grows in relation to the growth in population. The factors that have contributed to the growth of gross product in the postwar years are analyzed as well as other relevant variables such as gross income, net inflow of foreign capital, available goods and services, the capital-output ratio, and the investment coefficient.

The ultimate aim of the analysis is to identify the significant factors that have contributed to the growth of the economy, as well as to isolate the factors that are likely to have bearing on the future growth of the economy. The quantification of these factors in terms of reasonable hypotheses will form the bases for the projections.

1. Basic Trends: Aggregate Demand and Supply

For analytical purposes, two major periods may be distinguished in the growth of the economy since the war. First is the postwar period of rehabilitation and reconstruction extending from 1946 to 1949 - the year in which import controls were established. The second period covering 1950 to 1960 is an era of controls, marked by the licensing o foreign exchange, import restrictions, and government regulation of business. During the early part of 1960, a gradual adjustment of exchange rates was initiated, which may herald a new period in the Philippine economy.

Period of rehabilitation and reconstruction.--Even excluding 1946 as being too close to the termination of hostilities in 1945, this period for the Philippine economy was marked by high levels of consumption expenditures relative to the economy's output and income. The average per capita gross income for the period amounted to only P274 at 1956 prices, while per capita consumption of goods and services averaged P257.

The rate of consumption expenditures was financed to a greater part from a heavy inflow of foreign capital in the form of loans, aids and grants, mostly from the American Government. From 1945 to the end of 1949, the sum of U.S. Government disbursements and aid reached $1.4 billion (including the release to the Philippine Government of surplus property, expenditures under the Philippine Rehabilitation Act, and budgetary loans to the Philippine Government).

The heavy flow of investments, however, was for the purpose of restoring the prewar industries which were extensively damaged during the war. In agriculture, production was resumed with whatever few resources were on hand.

Despite the heavy inflow of foreign capital, imports of goods and services still exceeded the total capacity to import, causing a heavy drain on the foreign exchange reserves.

Period of Controls.--The abnormally high rate of consumption expenditures and the high level of imports required to satisfy the demand, were somewhat checked by the statutory imposition of a system of imports and foreign exchange controls in successive stages starting in 1949. During that year, the Central Bank of the Philippines was also established. Late in 1949, all transactions involving the use of foreign exchange were subject to licensing by the Central Bank. This marked the beginning of the period of controls, which extended to the early part of 1960 when a gradual "decontrol program" was implemented.

With restrictions imposed by the system of controls, the rate of consumption expenditures by 1950 fell in line with the more natural growth of the gross income and product. Since then consumption expenditures have been expanding at the rate of 0.815 peso for every one peso increase in gross income. Although consumption expenditures were curtailed somewhat, the rate of investment expenditures did not increase substantially in relation to the first period.

For the purpose of establishing basic trends, the period from 1950 to 1959 was thus the more "normal" period available for study, despite the fact that the economy was operating under stringent import restrictions. For a comparative study on the rate of growth attained by the economy as a whole, the period might further be subdivided into two distinguishable periods: (1) the first period comprising the years extending from 1950 to the end of 1955 which was characterized by a relatively high rate of growth of gross product despite the reduction of foreign grants and aids which were heavy immediately after the war, and (2) the second period encompassing 1956 to 1959 which was marked by a slackening in the growth of the Philippine economy (Table II-1).13/

13/ Involves (1) adjustment of foreign exchange rates; (2) delegation of allocating decision to agent banks (not to a market).

Table II-1.--Aggregate Supply and Demand at 1956 Prices

(Million Pesos)

Years	Gross Product	Quantum of Imports	Total Supply = Total Demand*	Private Consumption	Government Consumption	Gross Domestic Investment	Quantum of Exports
1950	6,273	894	7,167	5,261	467	637	802
1951	6,655	1,064	7,719	5,910	489	490	830
1952	7,422	978	8,400	6,358	581	466	995
1953	7,809	1,101	8,910	6,736	632	600	942
1954	8,324	1,184	9,508	7,080	665	723	1,040
1955	9,081	1,337	10,418	7,696	737	838	1,147
1956	9,537	1,234	10,771	7,874	800	872	1,225
1957	9,968	1,460	11,428	8,402	839	1,000	1,187
1958	10,327	1,264	11,591	8,656	867	884	1,184
1959	10,892	1,124	12,016	8,950	946	925	1,195

*Gross product at 1956 price is equal to Gross National Product at 1956 prices plus remittances of profits minus the terms of trade in relation to 1956. Remittances of profits have been deflated by the unit price index of imports.

Source of Basic Data: National Economic Council, Central Bank of the Philippines

Sparked by expansion in the volume of exports during the Korean war, per capita gross product increased by 7.75 percent from 1951 to 1952; and the exports continue to increase steadily, and augmented in some years by improvements in the terms of trade, enabled substantial additions to the gross income of the country. But the rate of gross income per capita from 1950 to 1955 was lower (4.09 percent annually) than that of gross product due in part to the steady decline in the favorable terms of trade. Per capita availabilities of goods and services, however, increased at a higher rate (4.8 percent yearly) than either yearly aggregate gross product or income, indicating a continued deterioration of the balance of payments situation at an average deficit of about P56 million per year.

From 1950 to 1955 aggregate demand expanded at a faster rate than gross product and again, income was mainly attributable to expansions in consumption rather than investment demand. Per capita consumption increased at an annual rate of 5.0 percent per year, while per capita investments increased only at the rate of 2.67 percent (Table II-2).

Table II-2.--Rate of Economic Growth of the Philippine Economy, 1950-1959

(Values in Million Pesos at 1956 Prices)

Item	1950-1955	1956-1959	Overall 1950-1959
Population (Thousand persons)	22,757	26,222	24,489
Gross Product	7,594	10,181	8,887
Terms-of-Trade Effect	79	13	46
Gross Income	7,673	10,194	8,933
Balance of Trade	(56)	(50)	(54)
Available Goods and Services	7,729	10,244	8,987
Consumption	7,102	9,334	8,218
Investment, Total	626	920	773
Fixed Investments	519	822	670
Changes in Inventory	107	98	103
Inflow of Foreign Capital	90	140	115
Capacity for External Payments	1,110	1,335	1,222
Capacity to Import	1,133	1,613	1,373
Imports	1,093	1,268	1,180
	(Percentages:	Averages for the periods)*	
Investment Coefficient	8.25	9.05	8.65
Per Capita Rates of Growth			
Gross Product	4.65	1.59	3.34
Gross Income	4.09	1.82	3.10
Available Goods and Services	4.78	1.29	3.08
Consumption	5.00	1.51	3.26
Investments	2.67	-	1.30

---

* Year end.

To a certain extent, the increment in imports over exports was made possible by improvements in the country's capacity to import, due mainly to expansion of the quantum of exports supplemented by favorable terms of trade in some years and foreign donations in 1950 and 1951. The inflow of foreign long-term capital was reduced to an average level of about P90 million per year. Foreign capital inflow was channelled largely for investment purposes so that the average investment coefficient for the period reached a level of about 8.25 percent of gross product.

In the subsequent period from 1956 to 1959, the rate of growth of the economy as a whole slackened considerably. The growth in the quantum of exports slowed down because trade was held down by quotas in the U.S. market, and the rise in sugar exports, particularly, (which attained full recovery in 1954) was restricted from 1955 on by the U.S. sugar quota. The country's gross product per capita increased at the rate of only 1.59 percent from 1956 to 1959. Moreover, increases in the prices received for exports did not substantially offset increments in the prices paid for imports, so that the terms-of-trade effect was negligible in comparison to the previous period. Thus, per capita income was just about the same level as per capita gross product--about P388.

The slackening of growth of the economy was also reflected in the substantial reduction in the growth of per capita availabilities of goods and services, the reduction of which was due largely to the decrease in foreign exchange reserves (which prevented expansion in available goods and services through imports). Per capita consumption increased at slightly lower rate than gross product--at 1.51 percent--while per capita availabilities expanded at 1.29 percent annually. A somewhat higher level of foreign capital inflow, however, made possible higher levels of investment expenditures so that the average investment coefficient increased to 9.05 percent of gross product. Although the volume of imports continued to exceed the volume of exports, the inflow of foreign capital at an average level of about P140 million per year together with continued foreign donations improved further the capacity to import, which in turn permitted the growth in per capita availabilities of goods and services (although at a much slower rate than in the previous period).

For the period 1950 to 1959 as a whole, the growth of aggregate production in the country reached an average annual rate of 6.3 percent, while total population grew at the rate of about 3 percent. Thus, per capita gross product increased at the rate of 3.3 percent. This relatively high rate of growth was assisted considerably by the expansion in export volume (which constituted about 11 percent of total demand) during the earlier part of the period in particular. This export expansion also enabled the economy to raise production of home-consumed goods by making possible imports of capital goods.

During the same 9-year period, fluctuations in the terms of trade held the increase in gross income at a moderate rate in contrast to expansions in the gross product. At the same time, continued inflow of foreign capital (largely in the form of reinvested earnings and foreign donations) permitted available goods and services to increase in line with the increment in gross income. The expansions in available goods and services, however, were largely absorbed by consumption expenditures. Investments increased 1.30 percent annually in contrast to the 3.26 percent annual rate of growth of consumption. The overall investment coefficient for the whole period reached only 8.65 percent of the gross product.

Implications of the growth rates.--If the rate of growth achieved by per capita gross product over the last 9 years was to continue, the standard of living in terms of per capita gross product would double in a little less than 21 years. In terms of the capacity of the economy to maintain that level of growth, however, certain principal problems can be foreseen that would call for greater national effort.

In the first place, recent trends in the quantum of exports and the terms of trade indicate a slowing down of future expansions in the capacity to import unless new export lines can be sufficiently developed. At the same time, greater effort towards import substitution would be called for to relieve the economy of further dependence on the external sector.

In the second place, both the development of new export lines and the import substitution process would necessitate substantial improvements in the investment coefficient, which, in turn, would cause further strain on the capacity to import. Thus, a relatively larger inflow of foreign investments would be required to raise the capacity to import in order to raise the investment coefficient, without at the same time overburdening the foreign debt limits of the country.

2. Sectoral Growth Rates and Structural Changes in Production

Within the overall rate of economic growth described in the foregoing pages, there has occurred a marked trend towards radical changes in the future composition of production of goods and services. To a certain extent, the changes in the composition of production came as a result of the import substitution process that had occurred to a limited extent within the last 14 years.

Thus, although agriculture still accounts for the greater part of production (constituting 33.7 percent of national income at factor cost in 1959), manufacturing (or industry) showed the highest rate of growth, its share in the total national income (at factor cost) having increased from 4.9 percent in 1946 to 15.7 percent in 1959. This indicates an increase of more than 200 percent in a period of 14 years, with the average annual rate of growth in manufacturing from 1950 to 1959 a little more than 11 percent, in contrast to the 3.91 percent rate of increase in agricultural output. Much of the increase in manufacturing output was due to expansions in the consumer goods industries, which aimed at displacing the large amount of imports of consumer goods (Table II-3).

Table II-3.--Distribution of Net National Product by Industrial Origin

(% At Factor Cost-1956 prices)

Industry	1946	1950	1955	1959	Average Rates of Growth 1950-1959
Agriculture	44.1	39.9	41.5	33.7	3.91
Mining	.1	1.3	1.6	1.7	8.95
Manufacturing	4.9	10.2	13.1	15.7	11.08
Construction	3.1	4.0	3.0	3.2	3.02
Trade	12.9	12.7	11.3	11.1	4.30
Transportation	3.5	3.4	3.3	3.7	6.65
Government	5.7	6.6	8.5	9.1	9.68
Services	25.7	21.9	17.7	21.8	5.75
Total	100.0	100.0	100.0	100.0	6.67

Apart from Government employment which increased at the rate of 9.68 percent, mining showed the second highest rate of growth, although its share of the total national income was only slightly less than 2 percent.

Following trends in mining and manufacturing output, the transportation activity showed the third highest rate of increase at 6.65 percent per annum. Despite this fact, however, its relative share in the total national income did not increase substantially.

In contrast to the expansions in mining and manufacturing, agricultural output expanded only at the rate of 3.91 percent, so that its share in total national income has been declining significantly. The relatively low growth in agricultural output was of course a combined effect of many factors, perhaps the most important of which has been the relative sluggishness of the growth of production of traditional subsistence crops.

3. Investments and the Capital-Output Ratio

One of the main determinants of the feasible rate of growth of the gross product is the rate at which productive capacity--or the stock of capital--expands concomitant with the expansions in the income of the community. The changes in the size of the population, the rise in the standard of living and the increase in total available income generally mean rising consumption expenditures. Moreover, if the standard of living is to rise, consumption expenditures would have to rise at a faster rate than population growth. This means that productive facilities must be expanded at a more rapid rate than population if living standards are to rise.

In the absence of more refined data on the stock of capital in the country and the rate at which it is depreciated, the annual expenditures on gross domestic investments were used to indicate the rate at which the stock of capital has expanded in the postwar years.

The investment coefficient.--The ratio of total gross investment to total gross product has remained at levels below 10 percent of gross product, except in 1957. The average coefficient for the whole period between 1950 to 1959 was about 8.65 percent. Even during the period of relatively high rate of growth of gross product between 1950 and 1955, the investment coefficient reached a level of only 8.25 percent. In the 3-year period 1956-1959, it reached a higher level of 9.05, although the rate of growth of output appeared to have declined.

This phenomenon, however, might be attributed to several situations. In the period from 1950-1955, the expansion in the gross product was due largely to a sharp upward trend in exports, the growth of which was greater than the growth of expenditures on investments, so that the incremental capital-output ratio for the whole period was about 1.1 for total investments and about 0.91 for fixed investments. In contrast to this period, relative stagnation in exports in the succeeding period tended to increase the capital requirements needed to increase gross product, so that the ratios for total and fixed investments were 2.03 and 1.82 respectively.

Thus, gross domestic investments from 1950-1955 appeared to be lower than investments from 1956-1959, despite the slower rate of growth of the gross product during the latter period.

Incremental capital-output ratio.--As a rough indicator of the aggregate incremental capital-output ratio for the whole economy, the historical annual increments in gross product have been compared with the annual outlay for capital formation. Since some fixed investments require a gestation period of more than one year, it may not be meaningful to attempt annual comparisons of the ratios derived. For the whole 9-year span between 1950 and 1959, however, the aggregate capital-output ratio (including changes in inventory) reached about 1.47. If only fixed investments (gross) are considered, however, the ratio is somewhat lower at 1.27 (Table II-4).

Table II-4.--Aggregate Incremental Capital-Output Ratio

(Amounts in Millions of Pesos at 1956 Prices)

Year	Total Gross Investments	Gross Fixed Investments	Annual Increments in Gross Product	Incremental Capital-Output Patio	
				Total Investments	Fixed Investments
1951	490	424	382	1.28	1.11
1952	466	400	767	.60	.52
1953	600	498	387	1.55	1.29
1954	723	570	515	1.41	1.11
1955	838	669	757	1.15	.88
1956	872	777	456	1.91	1.70
1957	1,000	861	431	2.32	2.00
1958	884	800	359	2.46	2.23
1959	925	849	565	1.64	1.50

Capital-Output Ratio, by Periods:	1950-59	1950-55	1956-59
Total Investments	1.47	1.11	2.03
Fixed Investments	1.27	.91	1.82

Source of Basic Data: National Economic Council.

Apart from the fact that the estimates of capital formation in the country are generally thought to be somewhat understated, but for which no basis for adjustments could be found, there were two real causes that may have contributed to a low capital-output ratio during the 1950-1959 period: (1) In the first place, the incidence of inflationary tendencies coupled with the maintenance of a somewhat artificial rate of exchange during the whole period of import controls tended to make imports of capital goods relatively cheaper than the domestic value of production. Some order of magnitude of the undervaluation of the stock of capital purchased during the period may be derived from the fact that the average selling rate of the dollar in "grey" market was about P3.00, in contrast to the official rate of exchange of P2.00 to $1.00. The import component of gross domestic investments, on the other hand, ranges from 31 percent to 35 percent of total investments, and about 37 percent of fixed investments; (2) the second factor that may have contributed to the low capital-output ratio (which has been touched on above) is typical of underdeveloped countries where export demand plays an important role in the growth of the gross product. To the extent that underutilization of productive capacity exists particularly in the export sector, an upward trend in external demand for exports tends to reduce the incremental capital-output ratio - insofar, that is, as the expansions in domestic production for exports are achieved through greater utilization of existing resources.

Distribution of gross fixed investments by sectors.--In evaluating the relation between aggregate investment and gross product, consideration must also be given to the distribution of gross investment among the various sectors of the economy, since differences in the capital-output ratios prevailing among these sectors affect the general relation between aggregate investment and growth. The most important feature of this relation is that the production is heavily dependent upon the attainment of an appropriate balance in the rates of expansion of the different sectors. If stagnation in growth is due to insufficient productive capacity in specific sectors, the elimination of the particular bottleneck becomes dependent upon changes in the composition of investment.

Available data for the Philippines on the composition of gross fixed investments from 1956 to 1959 are shown in Table II-5.

Table II-5.--Distribution of Gross Fixed Investment by Sector, 1956-1959

(Millions of Pesos at 1956 Prices)

	1956	1957	1958	1959	Percentage Distribution 1956-1959
Agriculture	51.3	52.4	36.9	30.0	5.19
Industry [a]	196.3	217.9	237.1	242.8	27.20
Basic Facilities [b]	76.6	115.6	97.9	125.3	12.64
Trade & Services	89.4	87.8	89.5	106.8	11.36
Construction	363.5	386.8	338.7	344.6	43.61
Residential	122.8	135.0	103.7	110.4	14.36
Government	222.7	224.7	208.5	216.8	26.55
Construction Enterprises	18.0	27.1	26.5	17.4	2.71
Total	777.1	860.6	800.1	849.4	100.00

[a] Includes mining and manufacturing.

[b] Includes transportation, communication and public utilities.

Source of Basic Data: National Income Accounts, National Economic Council.

Since data over a longer period are not available, an analysis of changes in the composition of fixed investments has not been possible. Some general remarks on the percentage composition for the whole period may nonetheless be appropriate.

Of the total fixed investments from 1956 to 1959, investments absorbed in industry represented about 27 percent of the total, a level which compares fairly well with that of the more industrially advanced countries where the proportion ranges between 25 to 30 percent. To a large extent, this reflected the emphasis on the development of import-substituting lines of domestic production. In contrast to investment in industry, investment in agriculture was only about 5 percent of the total, while that in basic facilities such as electric power and transportation represented 12.6 percent. This low proportion in the latter accentuates the inadequacy of transportation facilities in the country which, to a certain extent, may have impeded further expansions, particularly in agriculture.

If the gross fixed investments in each sector are compared with their respective contributions to national income (at factor cost), some idea of the differences in the capital-output ratios among the sectors may be derived. Consistent with what was to be expected, the incremental capital-output ratio for industry was substantially lower than that for basic facilities. The ratio in the former was 1.92, in contrast to the ratio of 4.44 in the latter. As one would expect, the capital-output ratio obtained for trade and services was less than one (0.73). This doubtlessly accounted for the relatively high proportion of the employed labor force in that sector (Table II-6).

Table II-6.--Incremental Capital-Output Ratios by Sector, 1956-1959

(Based on Contribution to National Income at Factor Cost)

Item	Annual Rate of Growth in Income Originating	Gross Fixed Investment as Percentage Income Originating	Incremental Capital-Output Ratio a/
Agriculture	- b/	1.44	-
Industry	7.86	15.00	1.92
Basic Facilities	7.26	32.2	4.44
Trade and Services	6.08	4.45	.73
Construction	6.7	12.56	1.87
Total (on Gross Product)	-	-	1.82

a/ The capital-output ratios given here by sector are derived by dividing gross fixed investments as a percentage of national income originating from each sector by the annual rate of growth of the latter. Since output is thus measured at factor cost, the figures would generally tend to be higher than the capital-output ratio computed on gross product. The figure for the total, however, refers to the aggregate as computed from the gross product.

b/ Due to extraneous factors, the physical volume of output in agriculture declined from 1956, so that it was not possible to calculate for the growth rate.

Source: National Income Accounts: National Economic Council

4. The Role of the External Sector

The extent of dependence of the Philippine economy on foreign trade and investment should have been deduced more or less from the foregoing analysis. However, since future developments in the economy hinge largely on developments in the external sector, specific remarks on the various aspects of the role of the external sector are now appropriate.

Foreign trade and the balance of payments.--Since the inception of the Philippine Republic in 1946, its economy has been typically export oriented, and consequently foreign demand was an important determinant of the total level of domestic income and general economic activity. Moreover, the measures that set the pattern for industrial development in the subsequent years tended to make imports an important source of goods and services. During the whole period of import control, definite changes have occurred in the structure of the economy which tended principally towards significant expansions in industrial activity. However, there was one feature in the climate of the period that tended to make the import substitution process in general quite limited in its extent. Although the objective of the foreign exchange and import control system was specifically to reduce nonessential imports, the pegging of the exchange rate to its prewar level tended to overstate the value of the peso in relation to U.S. dollars. In consequence, the investment climate favored the type of industrial activity that made maximum use of imported raw materials which could then be purchased at a relatively lower cost than domestic products in general. Thus the pattern of industrial activity that emerged during the period raised the economy from a less rigid dependence on imports that accompanies an economic structure which imports principally marginal goods for direct consumption, to the more rigid dependence that results when imports become a principal source of raw material. This feature of the development of the manufacturing sector (that is, dependence on imported raw materials) has brought rigidity to--if not actually increased--the economy's marginal propensity to import. 14/ This, coupled with the lack of diversification in exports, has rendered the economy extremely susceptible to developments in the external sector, which has assumed the important roles of (1) market for domestically produced goods and (2) the main source of raw materials and foreign investible funds which have financed a large share of domestic capital inflow.

Historically, as pointed out previously, favorable developments in world trade as well as substantial inflow of foreign grants and aid enabled the economy to sustain a relatively high rate of growth particularly during the quinquennium from 1950 to 1955. The quantum of exports during that period increased at an unprecedented rate of 7.44 percent per annum. Moreover favorable prices of exports during the period resulted in a favorable net terms-of-trade effect (in relation to 1956) of about P70 million annually--or a little more than 8 percent of the average export quantum.

These expansions in exports and the favorable terms-of-trade enabled the country to devote a large share of foreign exchange availabilities for imports of goods and services, which, by means of direct control by the Central Bank, were channeled mainly for investment purposes and raw material consumption by the expanding domestic industries. That the favorable terms of trade sustained the higher level of imports in relation to exports is indicated by the fact that the average annual deficit in the quantum of the balance of trade was about P133 million from 1950 to 1955, while the annual deficit in the balance on current account was only P54 million for the same period (Table II-7).

14/ Under these circumstances, the domestic income multiplier will be low, and it is relatively more difficult to increase domestic income through domestic investment (or government) spending, because the income spills abroad.

Table II-7.--Balance of Payments, 1950-1959

(Millions of Pesos at Constant 1956 Prices; Exchange Rate P2 : $1)

Item	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Quantum of Exports	802	830	995	942	1040	1147	1225	1187	1184	1195
Quantum of Imported Goods	705	881	798	939	989	1117	1017	1196	1082	949
Quantum of Imported Services	189	183	180	162	195	220	216	264	182	175
Quantum of Balance	(92)	(234)	17	(159)	(144)	(190)	(8)	(273)	(80)	71
Terms-of-Trade Effect	172	123	(81)	165	94	0	0	(20)	(1)	73
Balance on Current Account	80	(111)	(64)	6	(50)	(190)	(8)	(293)	(81)	144
Net Movement of Gold and Short-Term Capital	390	(95)	4	3	(46)	(65)	42	(294)	6	125
Errors and Omissions	71	(27)	0	19	(23)	9	49	64	(15)	125
Balance of Payments*	461	(122)	4	22	(69)	(56)	91	(230)	(9)	250

*The difference between the balance of payments and the balance on current account represents the net inflow of foreign capital and donations received minus remittances of profits and interest.

Source of Basic Data: Balance of Payments Statistics, Central Bank of the Philippines.

In terms of the overall balance of payments, substantial amounts of donations, as well as loans and reinvestments, more than offset the deficit in the balance of trade and remittances abroad, resulting in an average annual surplus in the balance of payments of P40 million during the same period (1950-1955). In 1950 alone donations received amounted to P341 million, consisting mostly of public and private war damage claims. Net inflow of foreign capital before remittances averaged more than P71 million annually.

The succeeding period from 1956 to 1959 brought a slower growth in the quantum of exports. Moreover, deterioration in the terms of trade in that period brought a net annual increment to the nation's income of only P17 million, or only about 24 percent of that in the preceding period 1950-1955. The combined effect of the reductions in the quantum of exports and the deterioration in the terms of trade was to reduce somewhat the capacity of the country to import goods and services. Despite reductions in imports, however, the quantum deficit in the quantum of balance of trade did not fall substantially, averaging about P120 million 15/ per annum during that period. A relatively slight gain in the terms-of-trade effect in 1959, however, reduced the overall deficit in the balance of trade to P59.5 million annually. Finally, in terms of the overall balance of payments, continuing inflow of capital and donations, particularly in 1959, more than offset the above deficits, resulting in an average annual surplus in the balance of payments of about P25.5 million (with continued extreme fluctuations from minus P230 million in 1957 to plus P250 million in 1959).

1. Composition of foreign trade.--The export trade consists principally of the sale of about 10 products which in 1958 accounted for almost 90 percent of all exports. Predominant among these are three products--copra, sugar and logs and lumber--all of which represented 66 percent of all exports in that year. Although abaca had been one of the predominant exports in the years immediately before and after the war, it has been declining in importance since 1953 mainly because the industry has been plagued by mosaic disease. Philippine exports, however, still account for the major portion of world trade in this product, although Philippine production now is only some two-thirds of what it was before the war.

Philippine exports of copra and coconut oil, however, are about twice the prewar figure, and they account for the major portion of the world's supply. Major markets for copra are the United States and Europe, the latter being the major area for expansion in recent years. By virtue of several trade agreements 16/ between the two countries, the Philippines has been enjoying a monopoly of the United States market which, in 1959, accounted for 47.6 percent of all copra exports.

Exports of sugar are almost entirely absorbed by the United States market, where prices have been relatively stable and somewhat higher than the "free" market price.

The development of a large export market for logs and lumber has been a fairly recent phenomenon in Philippine export trade. The Japanese market has been the principal outlet, accounting for 78.4 percent of total exports of logs and lumber in 1959. Exports

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15/ With, however, severe fluctuations from P17 million to P234 million as shown in Table II-7.

16/ In August 1957 the United States Congress passed a law suspending for 3 years an internal revenue tax of 3¢ a pound on coconut oil from Philippine copra. Since this tax constituted a substantial fraction of the cost of the oil, coconut oil has been in a better position to compete with the synthetic hydrocarbons.

to the United States constituted 10.2 percent, while the rest were accounted for by exports to the rest of the ECAFE region and to Europe.

Price instability in the world market is a principal factor affecting fluctuations in Philippine exports. For instance, despite virtual monopoly in the case of abaca, there appears to be a close correlation between prices and quantities, indicating that external market demand largely determines the prices and the degree of market stability for this product. In the case of sugar, however, the correlation is not as pronounced, and export volume has increased more rapidly than export prices.

Philippine imports in postwar years have consisted mostly of finished manufactured goods either for final use or for further processing and/or finishing in the country. While consumer goods constituted the bulk of imports in the early postwar years, accounting for more than 60 percent in 1949, a greater emphasis has been placed on imports of raw materials and capital goods since the imposition of exchange and import controls in 1949. In 1958, consumer goods accounted for only 18 percent of all imports, while raw materials and capital goods represented 56 percent and 25 percent respectively 17/.

2. The direction of foreign trade.--Although diversification of Philippine trade has improved considerably since 1949, the United States remains the major trading partner of the Philippines, accounting for more than 53 percent of total trade in 1959. This was a substantial decline from the peak level attained by U.S.-P.I. trade in 1953, wherein the United States market accounted for 71 percent of total Philippine trade. In that year, the United States took 54 percent of Philippine exports of copra by value; almost all of sugar exports, 39 percent of the abaca; 66 percent of the base metals; 25 percent of the logs, lumber and timber; 98 percent of the coconut oil, and nearly all of the desiccated coconut, canned pineapple and embroideries 18/. In terms of imports in that year, the United States furnished about three-fourths of total Philippine imports, accounting for almost all of the Philippine foreign supplies of tobacco, automobiles, and parts, as well as 88 percent of cotton textiles; 96 percent of rayon and other synthetic textiles; 85 percent of machinery; 48 percent of iron and steel manufacture; 53 percent of petroleum products; 82 percent of dairy products; almost 90 percent of paper and manufactures; 88 percent of chemicals and drugs and 95 percent of electrical machinery and apparatus.

Much of this build-up in United States-Philippines commercial relations in early postwar years was achieved principally through the ratification of a P.I.-U.S. Trade Pact in July 1946. Among the principal provisions of the agreement in the trade sphere were:

a. Reciprocal free trade for 8 years from July 4, 1946, to July 3, 1954. During this period products of either country entered the other free of ordinary customs duties, provided articles did not contain foreign materials in excess of 20 percent of the value of the articles at time of importation into the Philippines or United States: and

b. Gradually diminishing preferences for 20 years (July 4, 1954 to December 31, 1974) beginning at 5 percent of lowest duty accorded any country and increasing by 5 per-

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17/ A detailed examination of the structure of imports is presented in a later part on the structure of manufacturing.

18/ U.S. Dept. of Commerce. Investment in the Philippines, p. 69.

cent each calendar year until January 1, 1973, when full duties are to be imposed on products of both countries until July 4, 1974. Thereafter, duties are to be determined without regard to terms of the Trade Pact. In subsequent years, various revisions to the 1946 agreement were proposed most of which were embodied in the Laurel-Langley Agreement in September of 1955.

In the meantime, declining tariff preferences agreed upon in the two agreements induced a reorienting of trade to other channels. There has been a marked diversification of Philippine trade starting in 1956, when trade with the United States dropped from 63 percent to 57 percent. The growing importance of the ECAFE region in Philippine trade is due mainly to the rapid growth of trade relations with Japan. In 1958, the Japanese market absorbed almost 90 percent of Philippine exports to the ECAFE region, while more than 50 percent of imports therefrom were Japanese goods.

Although it has shown some improvement in recent years, trade with Europe has consisted essentially of exports of copra, other coconut products and abaca, largely to the Netherlands and West Germany. Except for 1957, Philippine trade with Europe has been very favorable with balances ranging from P10 million in 1956 to P16 million in 1959. 19/

The contribution of foreign investment.--If the role of investments is examined from the point of view of sources of funds available for investment purposes, it may be seen that financing from external sources has played an important role in the rate of investments in the Philippines. For the period 1950 to 1955, domestic capital formation amounted to a total of P3,754 million for the whole period, while the increase in foreign investment and donations received totaled P1,044 million, meaning that foreign financing accounted for about 27.8 percent of domestic investments. In the following 4-year period from 1955 up to 1959, the proportion declined somewhat to 22.2 percent while the average investment coefficient for the period increased over that of the preceding period (Table II-8).

19/ Philippine National Bank, Philippine Trade and Financial Problems with Particular Reference to Commercial Relations with the United Kingdom. Unpublished, 1960.

Table II-8.--Foreign Investment in Domestic Capital Formation: Totals for the Period

(Millions of Pesos at 1956 Prices)

Item	1950-1955	1956-1959	Overall 1950-1959
Capital formation	3,754	3,681	7,435
Increase in Foreign Investment (Net Inflow of Long-Term Capital)*	1,044	817	1,861**
Foreign Investment as a Percent of Capital Formation	27.81	22.20	25.03
Investment Coefficient	8.25	9.05	8.65

*Including donations.

**Includes reinvested earnings. Investments of resident Chinese business firms are excluded: such investments are not considered part of foreign investments or reinvested earnings.

Source of Basic Data: Central Bank of the Philippines
National Economic Council

This suggests a moderate increase in the rate of domestic savings vis-a-vis the required expansions in productive capacity. For the whole period under study, it may be concluded that foreign investments and donations financed a little more than 25 percent of domestic capital formation. If the rate of domestic savings that this suggests continues in the future, the economy would probably rely more heavily on the external sector for investment financing since it is unlikely that the low capital-output ratio thus far attained can also be maintained in the future.

An examination of the composition of foreign investments, however, reveals that long-term loans constituted only a small portion of capital inflow, the bulk of which was represented by private reinvested earnings of foreign resident firms. From 1950 to 1957, private capital movements accounted for 68.5 percent of total capital inflow.

The capacity to import.--In the final issue, the joint effect produced on foreign exchange availabilities by trends in export of goods and services and in foreign investment is reflected in the capacity to import. This concept may be defined as the equivalent of exports of goods and services, plus gross foreign capital receipts and minus the outflow of capital and remittances abroad. The balance thus represents the amount of current foreign exchange income which is available to pay for imports of goods and services. Imports, of course, cannot exceed the capacity to import for a long period of time since gold and foreign exchange reserves would be depleted. Over the long term therefore, this concept measures the external sectors' net contribution to the national economy. 20/

In terms of constant prices, fluctuations in the capacity to import are dependent upon the quantum of exports of goods and services, the terms-of-trade effect and the net move-

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20/ United Nations: The Economic Development of Colombia. Op. cit., pp. 39-40.

ment of foreign capital valued at prices for a specific year. 21/

For purposes of the present study, estimates of the capacity to import have been expressed in constant pesos at 1956 prices, and are therefore equal to the quantum of exports, plus the terms-of-trade effect in relation to 1956, plus the net movements of foreign long-term capital and donations received from abroad. The latter have been included because donations have consistently been an important source for imports. 22/ The quantum of exports represents the physical volume of exports valued at 1956 prices and is calculated by deflating export values with their unit price index. To express service receipts, remittances and capital movement in constant prices, current values have been divided by the index of the unit value of imports. In this way, foreign exchange receipts are expressed in terms of their import purchasing power in 1956. Moreover, the inclusion of the terms-of-trade effect in the calculation of the capacity to import makes it possible to adjust the latter for changes in relative prices with respect to the base year, so that the relative rates of the export quantum and terms of trade can be assessed separately. Finally, the terms-of-trade effect is calculated as the difference 23/ between the purchasing power of exports (the export quantum multiplied by the ratio of the unit price index of exports over the unit price of imports) and of export quantum. 24/ Table II-9 summarizes the capacity to import from 1950 to 1959.

21/ Loc. cit.

22/ Moreover, some items under donations represent real capital inflow, such as reparations and proceeds under U.S. Public Law 480.

23/ Let Qx be the volume or quantum of exports, Px the unit price index of exports, and Pm the unit price index of imports. Then, the terms-of-trade-effect (T/T) is given by: $T/T = \frac{QxPx}{Px} . \frac{Px}{Pm} - \frac{QxPx}{Px},$ which reduces to $\frac{QxPx}{Pm} - Qx = T/T$.

24/ All the relevant data and indices were derived from the Central Bank.

Table II-9.--Philippines: Total Capacity for External Payment and Capacity to Import

(Millions of Pesos, at 1956 Prices)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Exports	801.60	830.00	995.00	942.00	1,039.80	1,146.80	1,225.40	1,197.00	1,183.60	1,210.90
Inflow of Foreign Capital	77.16	14.60	43.52	99.12	89.44	216.02	164.80	139.86	95.73	158.96
Terms-of-Trade Effect (1956)	171.60	122.80	(80.60)	164.80	93.60	-	-	(20.40)	(1.20)	73.90
Total Capacity for Payment	1,050.36	967.40	957.92	1,205.92	1,222.84	1,362.82	1,390.20	1,316.46	1,278.13	1,443.76
Remittances of Profit and Interest	30.86	55.61	34.26	106.30	114.81	135.09	130.80	123.76	102.00	121.00
Outflow of Foreign Capital	6.17	11.85	17.59	18.62	46.24	12.37	13.80	72.16	14.84	26.26
Capacity to Import	1,013.33	899.94	906.07	1,081.00	1,061.79	1,215.36	1,245.60	1,120.54	1,161.29	1,296.50
Donations*	340.60	42.00	76.00	42.40	53.40	64.60	77.80	119.20	93.30	94.40
Capacity to Import Plus Donation	1,353.93	941.94	982.07	1,123.40	1,115.19	1,279.96	1,323.40	1,239.74	1,254.59	1,390.90

*Donations have been consistently distinguished from other international transactions because of their extraordinary nature and substantial contribution to the overall capacity to import. In the text, reference to the capacity to import includes donations.

Source of Basic Data: Central Bank of the Philippines.

In 1950, the total capacity to import reached a comparatively high level of P1,354 million, a level exceeded only in 1959. In the following year 1951, the capacity to import dropped by 30 percent from 1950 level, principally due to the termination of public and private backpay claims, so that net donations received in 1951 was only 12 percent of that received in 1959. In per capita terms, the capacity to import in 1951 was only P43 in contrast to P64 in the previous year.

In the succeeding years up to 1956, donations received fluctuated between P42 and P78 million, so that movements in the capacity to import were attributed primarily to the export quantum, and, to a lesser degree, on the terms-of-trade effect. During the whole period, exports accounted for more than 84 percent of the capacity to import, and slightly more than 85 percent of the total payments capacity. Capital inflow and the terms-of-trade effect contributed about 8 percent and 7 percent respectively.

While the average annual capacity to import for the period 1950 to 1955 was P1,333 million, the average annual level in the following period increased by about 10 percent to P1,305 million despite the reduction in the rate of expansion of exports and the deterioration in the terms of trade. Although the rate of growth had decreased, this was still possible for the volume of exports was maintained at a relatively higher level, and accounted for almost 89 percent of the capacity to import.

It is interesting to note that in both periods remittances abroad and capital outflow amounted to more than the inflow of capital so that in the period 1950 to 1955 the average annual net outflow of capital amounted to P8.3 million and increased further to P11.4 million in the succeeding period.

While the trends just described depicted the expansions in the capacity to import, the more useful appraisal of its role in the economic development of the country could be made only by comparison with the growth in the gross product. In 1951, the capacity to import was about P43 per capita (at 1956 prices), while per capita gross product stood at about P306. Thus per capita capacity to import stood at a little more than one-seventh of the gross product. From that year (1951) to 1955, the increments in the gross product and the capacity to import were both 36 percent, so that, it may be deduced that, during the period, for every 1 percent increase in the gross product, the capacity to import increased by the same percentage.

This relationship became even more pronounced in the succeeding period from 1956 to 1959, when a 1 percent increment in the capacity to import corresponded to an increase of only about 0.2 percent in gross product. Thus, it would seem, the economy became more dependent on the external sector in the sense that fluctuations in the capacity to import affected gross product more than at the earlier period.

B. Population Growth, Urbanization, and Projections

Growth of the Philippine population has been considered autonomously and has not been explicitly related to various economic factors that undoubtedly have influenced it. While the growth of total population, however, has been deemed exogenous to the country's economic structure, the distribution of population into urban-rural sectors is actually a function of the structure of the Philippine economy. In the final analysis, an attempt will be made to relate changes in economic structure and population by means of the input-output table.

1. Population Growth and Urbanization

Growth of population.--The Philippine population has increased at an average annual rate of growth of 2.275 percent from 1903 to 1960. From a total of 7.64 million population in 1903, the Philippine population increased about 3.6 times over the last 57 years. During the last Census (February 15, 1960) the population was estimated at some 27.46 million.

The rate of population increase from 1903 to 1960 has been steadily rising (Table II-10).

Table II-10.--Growth of the Philippine Population, 1903-1975

Year	Population (In Thousands)	Average Percent Annual Rate of Growth Between Years
Censuses		
March 2, 1903	7,635.4	-
December 31, 1918	10,314.3	1.92
January 1, 1939	16,000.3	2.22
October 1, 1948	19,853.0*	2.24
February 15, 1960	27,455.8	2.84
Projections (Midyear)		
1960	27,747.0	2.84
1965	32,252.3	3.06
1970	37,764.6	3.21
1975	44,505.5	3.34

*As adjusted by the National Economic Council, see: B. Aromin, "Memorandum to the Chief, Standards and Review Branch, Office of Statistical Coordination and Standards, NEC," July 14, 1960. The memo study implied that the 1948 census was underestimated since the average rate of increase of more than 3 percent from 1948 to 1960 seems hardly possible; it would be more plausible to expect that the apparent acceleration of the rate of population growth from 1948 to 1960 has been actually a long gradual increase from 1939.

The rapid increase in population has been due largely to a rapidly decreasing death rate, while the birth rate has remained constant at a high level. The birth rate is probably close to 50 per thousand 25/ population; while the death rate has fallen probably be-

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25/ Recent estimates of crude birth rates are as follows:

Period	Crude birth rate
1930-34	47.2
1939-43	47.4
1948-52	47.1

See Kathleen M. Jupp: "Patterns of Population change in the Philippines, 1939-1959", The Philippine Statistician, pp. 11-29.

low 20 per thousand population, from an estimated average of 27 per thousand population during 1918-1939. The declining death rate can be attributed to rapid progress in medical technology and public health measures which have arrested the spread of epidemic diseases and reduced deaths due to the many infectious diseases. The birth rate has remained high because of the tendency of the Philippine population to marry at ages when fertility is highest. An increase of population due to immigration from other countries has been extremely negligible.

Urban-rural distribution of the population. There is a trend towards an increasing urban population, the term urban here having the connotation given to it by Philippine Statistical Survey of Households (PSSH). The PSSH has considered as urban the population within (1) the Metropolitan Manila area; (2) chartered cities and provincial capitals, and (3) poblaciones. While this definition is somewhat arbitrary, it has been the only available classification within the resources of the present study.

Within the framework of the PSSH concept of urbanization, there has been a marked increase in the urban population of the Philippines. In 1918, only about 26.5 percent of the Philippine population resided in urban areas. By 1960, this ratio had increased to 36.7 percent. Among the urban sectors, the population within the Metropolitan Manila area has increased rapidly over the last 50 years at the average annual rate of 2.5 percent. On the other hand, rural population has increased by 1.92 percent average annually from 1918 to 1960.

Growth in number of households.--The growth in the number of households has been close to the growth of total population. Thus, while population increased by some 2.22 percent annually from 1918 to 1960, the number of households increased annually by 2.13 percent.

With respect to institutional households (such as hospitals, asylums, charitable institutions, religious organizations, and the like), the population within such households has been estimated (in 1957) at about 0.8 percent of total population. In other countries, the institutional population has been estimated at 0.67 percent for Chile, 0.96 percent for El Salvador, and 1.04 percent for the United States. The institutional population in 1965 and 1975 has been projected on the basis of the estimated 0.8 percent of total population as follows:

Year	Institutional Population (In Thousands)
1965	258
1975	356

The institutional population, however, is already included in the population estimates given above and in the population projections presented below.

2. Projections of Population and Number of Households

Projections of the Philippine population.--Projections of the Philippine population have been prepared using the United Nations "component method" technique and on the basis of the following assumptions:

1. The projections start with the official preliminary count of the Philippine population during the census of 1960, which places the population on February 15, 1960 at

27,455,799. 26/

2. The crude birth rates (used for initial estimates of number of births) and the corresponding sex-age adjusted birth rates are as follows:

Five-Year Period	Quinquennial Crude Birth Rate**	Quinquennial Sex-Age Adjusted Birth Rate
1960-65	48.3	52.6
1965-70	47.7	52.6
1970-75	47.2	52.6

[**] The United Nations used an estimate of 48.7 as the crude birth rate for 1957-1962, has maintained this constant, and therefore arrived at a constant sex-age adjusted birth rate of 53.07.

The sex-age adjusted birth rate is assumed constant at about 52.6--slightly lower than the 53.07 derived by the United Nations using PSSH data. 27/

3. The percentage distribution of the 1960 population by age and sex is similar to those adopted by the United Nations in preparing their projections (which distribution, in turn, was derived from the 1957 PSSH estimates; Table II-11).

26/ Bureau of the Census and Statistics, Special Bulletin No. 1: Population of the Philippines by Province and Municipality, February 15, 1960 (Mimeographed, November 26, 1960).

27/ United Nations, Population Growth and Manpower in the Philippines (Population Studies No. 32), U. N. Department of Economic and Social Affairs, New York, 1960.

Table II-11.--Age Distribution of the Philippine Population, 1903-1975

(Percent of Total Population)

Age Class	Census			1960*	Projections		
	1903	1939	1948		1965	1970	1975
(Years of Age)							
0 - 4	15.09	16.27	15.56	18.51	18.67	18.72	18.78
5 - 9	13.74	15.59	15.29	14.87	14.93	14.88	15.11
10 - 14	10.75	11.15	13.31	12.56	12.54	12.56	12.60
15 - 19	9.96	10.36	10.73	10.49	10.47	10.56	10.48
20 - 24	7.99	9.52	9.19	8.74	8.76	8.74	8.73
25 - 29	9.15	8.40	7.77	7.21	7.26	7.24	7.19
30 - 34	7.27	5.73	5.83	5.83	5.98	6.02	5.98
35 - 39	6.09	5.43	5.87	4.84	4.81	4.96	4.93
40 - 44	4.77	3.79	3.92	4.18	3.98	3.96	4.03
45 - 49	3.65	3.57	3.61	3.56	3.40	3.24	3.20
50 - 54	3.22	2.58	2.25	2.84	2.85	2.72	2.58
55 - 59	2.47	1.97	1.79	2.10	2.22	2.23	2.13
60 - 64	2.60	2.17	1.73	1.53	1.58	1.67	1.68
65 and over	3.25	3.47	3.15	2.74	2.55	2.50	2.58
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Estimated on the basis of 1957 PSSH data. No age distribution was made for the year 1918 because the published census data give a different age grouping than that of the other census years.

The age-sex distribution of population is not yet available from the 1960 census.

4. Mortality will decline, and life expectancy at birth will increase at the rate of 2.5 years every 5 years. In the initial projection period 1960-1965, a model life table with life expectancy of birth at 47.5 years was adopted.

The above assumptions have given a "conservative" projection of the Philippine population as follows: 28/

1. From an estimated 27,747,000 in mid-1960, population will increase to 32,252,300 by mid-1965, to 37,764,650 by mid-1970, and to 44,505,520 by mid-1975.

2. The average annual rate of population growth from 1960 to 1965 will be 3.06 percent; from 1965 to 1970 about 3.21 percent; and from 1970 to 1975, about 3.34 percent.

3. Compared with "conservative" and other projections made by the United Nations and the National Economic Council, the projections made below are not too divergent:

	Projection of Population at Midyear			
		National Economic Council-United Nations**		
Year	AGRECO*	Conservative	Low Mortality	Declining Fertility
			(In Thousands)	
1962	-	28,279	29,231	28,225
1965	32,252	-	-	-
1967	-	33,020	34,893	32,691
1970	37,765	-	-	-
1972	-	38,793	41,998	37,788
1975	44,506	-	-	-
1977	-	45,872	50,787	43,639

*Based on preliminary count of the 1960 census.
**Based on 1948 census data (Op. cit., pp. 8-10).

28/ Two other projections prepared by the United Nations, op. cit., are (1) "low mortality" projections which assume that the average life expectancy at birth would increase by about 5 years in each successive 5-year period; and (2) "declining fertility" projections assume a 1 percent yearly decline in fertility after 1960, so that the sex-age adjusted birth rate would fall to 43.7 during the late 1970's.

Preliminary studies of the National Economic Council, according to the latest reports, indicate that "low mortality" projections may fit the present growth of the Philippine population better than the conservative projections. However, no conclusive findings have as yet been presented to date.

The comparative rates of growth of the population for the various projections are:

	Average Annual Percent Increase			
		United Nations		
Period	AGRECO	Conservative	Low Mortality	Declining Fertility
1957-1962	-	3.00	3.36	2.96
1960-1965	3.06	-	-	-
1962-1967	-	3.15	3.60	2.98
1965-1970	3.21	-	-	-
1967-1972	-	3.27	3.78	2.94
1970-1975	3.34	-	-	-
1972-1977		3.41	3.87	2.92

Projections of the urban-rural population.--Projections of the urban-rural population to 1965 and 1975 assumed a continuing rate of urbanization and, therefore, a fast migration of population to urban areas. Continuing the trends observed from 1948-1960 with respect to the average annual rate of growth of the urban-rural sectors, estimates of the population by urban-rural sectors have been obtained (Table II-12).

Table II-12.--Growth of the Philippine Population by Urban-Rural Households, 1903-1975

(In Thousands)

Year	PSSH Classification				AGRECO Classification		
	Metropolitan Manila	Chartered Cities and Prov. Cap'ts	Poblaciones	Barrios	Metropolitan Manila	Urban Outside Manila	Rural
Census							
Mar. 2, 1903	237	#	#	#			
Dec. 31, 1918	363	979	1,390	7,582	-	-	-
Jan. 1, 1939	848	1,929	1,691	11,532	-	-	-
Oct. 1, 1948	1,410	2,676	3,023	12,744	-	-	-
Feb. 15, 1960	2,131	3,818	4,107	17,400	2,131	6,398	18,927.2
Projections (Mid year)							
1960	2,160	3,862	4,148	17,577	2,160	6,468	19,119
1965	2,609	4,550	4,783	20,310	2,609	7,741	21,902
1970	3,179	5,399	5,554	23,636	3,179	9,084	25,505
1975	3,889	6,449	6,490	27,680	3,889	11,002	29,614

The population of each of the urban-rural sectors has actually been projected on the basis of the rate of growth from 1948-1960 (subject to the condition that the sum of the population within the sectors should equal the total Philippine population projected, using the United Nations "component method" as discussed above).

Table II-13.--Number of Households, By Urban-Rural Sector
1960-1975

Urban-Rural Sector	1960	1965	1970	1975
	(In Thousands)			
Metropolitan Manila	337	408	492	598
Urban, Outside Manila	1,017	1,219	1,419	1,705
Barrios & Rural Precincts	3,202	3,712	4,251	4,855
Total	4,556	5,339	6,162	7,158

Table II-14.--Projections of the Number of Households and Average Household Size, By Urban-Rural Sectors, 1939-1975

Year	Population (In Thousands)	Average Household Size (Number of Persons per Household)	Number of Households (In Thousands)
1939*	16,000	5.1	3,143.89
1948*	19,853	5.7	3,501.13
1957***	-	5.7[a]	3,964.00[b]
1960	27,747[c]	6.1	4,556.00
1965	32,252	6.04	5,339.00
1970	37,765	6.13	6,162.00
1975	44,505	6.22	7,158.00

*Census
**PSSH Surveys

a/ PSSH Family Income and Expenditure Survey, 1957.
b/ PSSH Survey of May, 1957.
c/ Midyear Population, July 1, 1960.

Projections of the number of households.--Projections of the growth of the number of households by 1965 and 1975 have been undertaken on the basis of projections of population and household size, and tested for feasibility mainly against marriage rates. The projections of the expected number of households by 1965 and 1975 (as shown on Table II-13) imply the following (see also Table II-14):

Period	Ave. No. of New Households Formed Yearly	Ave. No. of Marriages Annually	Percent of New Households to Marriages
Censuses and Surveys			
1918-1939	58,364	80,570	72.44
1939-1948	35,724	109,455	32.64
1948-1960	81,154	128,780	63.02
Projections			
1960-1965	130,050	195,000*	66.6
1965-1975	160,730	250,000**	64.3

*Ave. from 1960 to 1965, based on a marriage rate of 13 per thousand population.
**Ave. from 1965 to 1975, based on the same marriage rate.

A crude test of the feasibility of the rate of household formation projected has been made by comparing the projected average annual rate of growth of households against the expected average number of marriages during the periods covered by the projections. The marriage rate per annum has been increasing as follows: 29/

29/ There is some opinion that the marriage rates may be declining, principally because there are delays in marriages caused by more and more young people pursuing higher education. Some rough estimates of the average age of women marrying indicate an increase at the rate of 0.3 year from 1953 to 1956 (that is, from 21.4 years to 21.7 years). However, whether the apparent increase is significant is questionable; it is more likely that the age of marriage of Filipino women is almost constant. (See B.A. Aromin, "Commentary on 'Some Filipino Population Characteristics and Their Relation to Economic Development'", Philippine Sociological Review Vol. VII, Nos. 1 and 2, p. 28). The number of marriages is known to be underregistered; but adjustments of the marriage rates on the basis of the following assumptions still indicate an increasing trend in marriage rates: (1) the registered number of births is as underestimated as the registered number of marriages in any one year; (2) the degree of completeness of birth rates in any one year is measured by the ratio of registered (crude) birth rates to a hypothetically correct crude birth rate of 49. Thus, if br_1 is the registered birth rate in any one year, then the adjusted marriage rate MR would be equal to

$MR_1 = \dfrac{Mr_1}{(br_1/49)}$, where Mr_1 is the marriage rate for 1 based on registrations.

The result:

Period	Adjusted Marriage Rate
1918-1939	15.5
1939-1948	19.4
1948-1958	22.1

Period	Average Marriage Rate (Per Thousand Population)
1918-1939	10.41
1939-1948	12.25
1948-1959	12.85
Projection	
1965	13.00
1975	13.00

Projections to 1965 and 1975 assume a constant marriage rate (per thousand population) of 13.

The number of marriages is more than the number of new households formed since (1) some marriages are actually remarriages (for instance, of widowers or widows) and/or (2) some newly married couples stay with relatives who already have established households. About 63 to 66 percent of newly married couples were estimated to have established new households, the apparent exception, however, being the period 1939 to 1948. During this period (which covers the last war, rehabilitation, and the Huk crisis) many newly married couples seem to have stayed together with relatives for safety, economy, and/or the housing problem, so that household formation appears to be extremely low in relation to the number of marriages.

The number of households by 1965 and 1975 has been projected by dividing the total population in each urban-rural sector with the average household size by sector as follows:

Urban-Rural Sector	Average Household Size			
	1957*	1960**	1965	1975
Metropolitan Manila	5.9	6.41	6.40	6.50
Urban, Outside Manila		6.36	6.35	6.45
Rural	5.6	5.97	5.90	6.10
Philippines	5.7	6.09	6.04	6.22

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*PSSH

**AGRECO Survey

The projections further imply an annual rate of growth of household formation close to 3 percent from 1960 to 1975.

C. Projections of the Growth and Structure of the Philippine Economy

The projections of economic conditions as far ahead as 1975, or even to 1965, obviously cannot be detailed blue prints but more of suggestive outlines. What actually occurs when the time comes may correspond closely to the projections--or there may be considerable differences. In either case, light is thrown on the relevance of the projections or on unforeseen future developments. Projections are also distinguished from plans (or programs). Plans consist of targets (for instance, a desirable rate of growth of gross product) and the corresponding economic instruments to achieve the targets established. Projections, however, are largely expectations on probable developments, with no necessary relationships to targets. This study is more of a projection than a plan, although due consideration has been taken of government programs.

1. Alternative Hypotheses of Economic Growth

As indicated in the preceding sections the per capita gross product between the period 1950 to 1959 expanded at the rate of 3.34 percent per annum, its growth having been particularly intensive during the first 5 years of the period when the average annual growth rate was 4.65 percent. It will be recalled that the growth attained in this period was assisted by favorable developments in the external sector, which are not expected, nor likely, to exert the same influence in the future.

Judging from considerations already presented in summary form, it seems reasonable to assume that the rate of growth attained in that earlier period (1950-1955) would be the maximum that could be attained within the next 15 years. Two important aspects of the problem are worth reviewing. In the first place, it seems unlikely that world demand for the country's current exportable products could be increased at the same rate at which it expanded during the duration of the Korean war at the earlier part of the 1950's, and that the substantial amount of donations received during the period could be maintained at the same level in the future. In the second place, although significant changes have occurred in the structure of production, a greater intensity of the import substitution process would be necessary to relieve the economy of its present dependence on imports for availabilities of goods and services; particularly of raw materials and capital goods. Indications exist, for instance, that in order for the whole economy to generate P100 of gross value added (gross product), it would have to import about P6 worth of goods and services. If only the manufacturing industry is considered, however, then the import requirements become about P20 for every P100 of gross value added.

If the projections are to be based on judgments following the above considerations, it would seem that the feasible rate of growth that could be attained by the per capita gross product would be about 1.5 percent per annum to 1965 and a little more than 2 percent per annum from 1965 to 1975.

For the projections up to 1965, however, it was felt necessary to take into account the specific development program envisioned by the National Economic Council for the period covering 1960 to 1962 (but could well be extended up to 1965). Hence, for purposes of this study, two alternative projections were prepared for 1965, one of which incorporates some of the various aspects of the government (NEC) economic development program. Hypothesis A for 1965 assumes the rate of growth (from 1959 to 1965) of per capita gross product at 1.5 percent annually. Hypothesis B postulated a rate of growth of per capita gross product of 2 percent per annum from 1959 to 1965 (Table II-15).

Table II-15. -- Summary of Alternative Projections of Economic Growth, 1965 and 1975

(Millions of Pesos at 1956 Prices)

	Current	1965		1975
	1959	Hypothesis A*	Hypothesis B*	
Year-end Population (Thousand Persons)	27,353	32,720	32,720	45,139
Gross Product	10,892	14,246[a]	14,673[b]	24,675
Terms-of-trade effect	74	0	0	0
Gross Income	10,966	14,246	14,673	24,675
Net Inflow of foreign capital	144	34	197	56
Available goods and services	10,822	14,280	14,870	24,731
Consumption	9,897	13,056	13,409	22,065
Personal	8,951	11,845	12,198	20,353
Government	946	1,211	1,211	1,712
Investments	925	1,224	1,461	2,666
Fixed	849	1,100	1,344	2,327
Inventory Increase	76	124	117	339
Per Capita	(Pesos at 1956 Prices)			
Gross Product	398	435	448	546
Gross Income	401	435	448	546
Available goods and services	396	436	455	548
Consumption	362	399	410	489
Investments	34	37	45	59
Rate of Growth of Per Capita Gross Product, 1959-1965, 1959-1975		1.5 %	2.0 %	2.0 %
	Averages, 1959-65; 1939-75			
Coefficient of total investments*	9.05[c]	8.59	9.96	10.84
Coefficient of gross fixed investment*	8.07[c]	7.72	9.16	9.41
Capital-output ratio: Total investments	2.0 [c]	1.88	1.96	2.0
Fixed Investments	1.8 [c]	1.69	1.79	1.8

[a] Projected at the rate of 1.5 percent per capita annually.

[b] Projected at the rate of 2.0 percent per capita annually.

[c] Averages, 1956-1959.

*In relation to gross product.

Further assumptions made for projections to 1965 under hypotheses A and B were as follows:

1. Hypothesis A postulated capital-output ratio of 1.88 to 1.00, a ratio lower than the average for the period from 1956 to 1959 but substantially higher than the average for 1950-1955; while hypothesis B has maintained the estimated capital-output ratio average for the period 1956-1959, of about 1.96 to 1.00.

2. Hypothesis A does not explicitly consider existing government programs. Hypothesis B assumes full implementation of the National Economic Council's proposed foreign exchange budget up to 1965.

3. The projections of the net inflow of capital under hypothesis B were based on previous estimates made by the Central Bank of the Philippines regarding the absorptive capacity of the Philippine economy for foreign investments and, therefore, assumed a net inflow of foreign capital amounting to $456 million for the entire period from 1959 to 1965 (or about $76 million per annum). In the case of hypothesis A, the projected total gross long-term foreign capital inflow was assumed at $1 billion for the entire period 1959 to 1975, indicating a net inflow of capital of about $17 million yearly from 1959 to 1965 and about $28 million yearly from 1965 to 1975 (Table II-16).

Table II-16.--Projections of Inflow and Outflow of Foreign Capital

(Millions of Dollars at 1956 Prices)

	1965		1975
	Hypothesis A	Hypothesis B*	
I. Inflow of Foreign Capital			
A. External Loans	81.2	200	60.4
B. Extraordinary Sources, Reparations	30.0	30	30
C. Private Capital Movement a/	25.7	b/	c/
Total Inflow	136.9	230	90.4
II. Outflow of Capital			
A. Remittances of Profits and Interests	73.0	87	c/
B. Commitments on Foreign Loans: Amortization	69.2	67	62.4
i. On Outstanding	37.4		d/
ii. New	31.8 d/		62.4 d/
Total Outflow	142.2	154	62.4
III. Net Inflow of Foreign Capital (Excluding Other Donations)	- 5.3	76	28.0

a/ Mostly reinvested earnings.

b/ Not considered explicitly in the program.

c/ On the assumption that reinvestments will just offset remittances.

d/ Including interest.

* Hypothesis B adopts the proposed foreign exchange budget of the National Economic Council.

The projections to 1975 adopted a rate of growth of per capita gross product of about 2 percent per annum-or an increase in the aggregate of about 5.24 percent annually during the whole period from 1959 to 1975. With the capital-output ratio postulated at 2.0 to 1, the projection implies only moderate increases in the investment coefficient, which would rise from 9 percent in 1959 to 10.8 percent by 1975.

In all of the above projections the rate of personal consumption expenditures in relation to gross income has been maintained. 30/ It is, of course, possible for the future rate of personal consumption to decline in relation to the growth in gross income. However, any such consideration would premise the projections on a certain rate of growth of consumption rather than on a given increase in the gross product and income. 31/

The projections are also premised on the assumption that increases in the price of exports will just offset increases in the price of imports, so that the terms of trade in relation to 1956 will not be signigicant.

2. The Demand for Exports and the Capacity to Import: Summary of Projections

The above projections include a series of assumptions as to the future role of the external sector in the country's economic development. The following summarizes the various projections that were made in determining the future level of the capacity to import.

Projections of the quantum of exports.--As indicated at an earlier part, almost 90 percent of total merchandise exports of the Philippines was composed of 10 principal commodities. Only one of these can be considered ready for final use (canned pineapples), the rest being raw materials in varying degrees of preparation.

Unless drastic changes occur in the pattern of world demand and domestic production, it is expected that up to 1975, the Philippines will continue to be mainly a raw material exporter since competitive, external marketing of finished products appears to be a goal beyond attaining. While manufactured products have already begun to account for a bigger proportion of the export trade, the shift is not nearly so pronounced as to effect a marked change in the composition of Philippine exports. In the years from 1958 and 1959, the 10 principal commodities composed 88 percent of total merchandise exports, in contrast to about 90 percent in the period from 1948 to 1951. Apart from considerations of the world demand for the principal exports, one other important feature of its future growth was considered in the formulation of the projections of the export volume. Recent incentives granted to the export industries in general, by virtue of the increased peso value of exports under the "decontrol" program, tend to indicate acceleration rather than slackening of export activity in the future. To a certain extent, the acceleration the export trade since 1956 was also due to internal difficulties experienced by the export industries, particularly because export peso receipts were pegged to a somewhat artificial exchange rate while internal inflation tended to increase costs of production.

30/ That is, a constant propensity to consume is assumed.

31/ The level of personal consumption expenditures in relation to gross income can be altered by "forced savings," import controls (so that imports of consumer goods are restricted) and the like.

With these considerations in mind, the projections of exports are believed feasible and imply an average annual increase in the volume of merchandise exports of 4 percent from 1959 to 1965 and about 2.4 percent from 1965 to 1975, in contrast to the average annual growth of exports of only 1.9 percent from 1956 to 1959. This, however, is still substantially less than the 7 percent rate of expansion during the Korean war.

For the projections of service exports, the principal items considered were U.S. Government expenditures, freight and insurance on merchandise exports, and domestic production of gold. With full implementation of the "decontrol" program anticipated before 1965, it is expected that U.S. Government dollar outlays in the country will be reduced to a level of about $50 million annually.

While freight and insurance export receipts were assumed to follow projected trends in merchandise exports, net nonmonetary gold movement (domestic gold production) was projected on the hypothesis that the recent government subsidy on production would help lift current production. Therefore the normal production trend between 1949 to 1958 could be maintained in the future. (Table II-17 summarizes the projections of the total quantum of exports.)

Table II-17.--Summary of Projections of the Quantum of Exports, 1965, 1975.

(Million of Pesos at 1956 Prices)

	Current		Projected	
	1956	1959	1965	1975
Quantum of Exports	1,225.36	1,211	1,418.00	1,781.00
Merchandise, freight and insurance	879.00	1,211b/	1,176.00a/	1,491.00
Services	346.36		242.00	290.00
Net Non-Monetary Gold	28.44		39.89	61.14
Foreign Travel	3.12			
Miscellaneous	85.20		102.11	128.86
Government not included elsewhere	229.60		100.00	100.00

a/ Insurance and Freight:
1965: 4.7633 million pesos
1975: 6.0378 million pesos

b/ Breakdown not available.

Projections of the capacity to import.--The combined projections of the quantum of exports and of the inflow of foreign capital determined the level of the capacity to import which might be attained in the projected years.

Thus, by 1965, the capacity to import would reach a level of about P1,453 million (at 1956 prices) under hypothesis A or an average annual increase of 1.05 percent from 1956 to 1965. This implies a rate of growth substantially lower than that attained between the 4 years from 1955 to 1959 mainly because substantial reduction is anticipated in receipts from U.S. Government expenditures (Table II-18).

Table II-18.--Projections of the Capacity to Import

(Millions of Pesos at 1956 Prices)

	1956	1959	1965		1975
			Hypothesis A	Hypothesis B a/	
Quantum of Exports of goods and services	1,225	1,211	1,418	1,418	1,781
Terms-of-Trade Effect	0	74	0	0	0
Inflow of Foreign Capital	165	159	214	400	121
Total Payments Capacity	1,390	1,444	1,632	1,818	1,902
Remittances of Profit and Interest	131	121	146 b/	174 c/	d/
Outflow of Capital	14	26	138 e/	134	125 e/
Capacity to Import	1,245	1,297	1,348	1,510	1,777
Donations	78	94	105	105 f/	60
Total Capacity	1,323	1,391	1,453	1,615	1,837
Per Capita Capacity to Import (Pesos at 1956 Prices)	53	50	44	49	41
Per Capita Gross Product (Pesos at 1956 Prices)	380	398	448	462	547
Capacity to Import as Percent of Gross Product	13.9%	12.6%	9.8%	10.6%	7.5%

a/ Based on the 3-year development program of the National Economic Council: "The Proposed Foreign Exchange Budget for 1962-1966."

b/ Covers remittances of profits only.

c/ Including miscellaneous disbursements for which no breakdown was available.

d/ On the assumption that private capital reinvestments offset remittances.

e/ Including interest and amortization of outstanding and new loans.

f/ Three-year Program of Economic and Social Development (FY 1959-60 to FY 1961-62), National Economic Council, p. 29.

Under hypothesis B, however, the capacity to import will reach a level of P1,615 million (at 1956 prices)--or an average annual increase of 2.52 percent per annum. In contrast to the growth rate implied under hypothesis A, hypothesis B would imply a rate of growth somewhat higher than that attained between 1955 to 1959, but still substantially lower than the rate attained from 1951 to 1955.

In terms of per capita, the capacity to import in 1965 will only be about P44 under hypothesis A, in contrast to P53 in 1956 and P50 in 1959. Under hypothesis B, it will stand at only 1 peso lower than the 1959 level. In the former hypothesis, the proportion of the capacity to import to total gross product will decline from 12.6 percent in 1959 to 9.8 percent in 1965; and under hypothesis B, about 10.6 percent.

Projections of gross domestic investment.--Another of the important considerations in the feasible rate of growth that the gross product might attain, is the rate at which the stock of capital may expand in order to sustain the growth in the gross product.

One of the main conclusions in this respect is that the aggregate capital-output ratio may have to increase as expansions in manufacturing begin to shift from light to heavy industries, and as more investments are made in basic facilities. At any rate, it seems unlikely that the extremely low ratio maintained between 1950 to 1955 can be maintained within the next few years.

For this reason, the projections in this study postulate an increase in the average capital-output ratio from 1.36 attained in the postwar years to 1.88 from 1959 to 1965 in the case of hypothesis A, and 1.96 in the case of hypothesis B. The average from 1959 to 1975, however, will rise to 2.06 (Table II-19).

Table II-19.--Projections of Gross Investment

(Millions of Pesos at 1956 Prices)

Item	1965		1975
	Hypothesis A	Hypothesis B	
Rate of Growth of Total Gross Product	4.57	5.09	5.24
Capital-Output Ratios:			
Total Investments	1.88	1.96	2.06
Gross Fixed Investments	1.69	1.80	1.80
Coefficient of Gross Investment	8.59	9.96	10.81
Coefficient of Fixed Investment	7.72	9.16	9.41
Total Gross Product	14,246	14,673	24,675
Total Gross Investments	1,224	1,461	2,666
Gross Fixed Investments	1,100	1,344	2,327
Increase in Inventories	124	117	339

Under these hypotheses, the investments that would be required and sustained would be P1,224 million in 1965 for hypothesis A, and P1,461 million for hypothesis B. By 1975, the investment requirements would reach P2,666 million, or a little less than 11 percent of the gross product.

If these projections of domestic capital formation are compared with the projections of foreign investment, it will be seen that, under hypothesis A, the average contribution of foreign investment will decrease from 25 percent from the period 1950 to 1959 to 16.5 percent from 1959 to 1965; but, under hypothesis B, it will increase further to 28.7 percent. From 1965 to 1975, however, domestic savings are assumed to account for the greater part of capital formation, so that the average contribution of foreign investment will decrease to less than 3 percent (Table II-20).

Table II-20.--Foreign Investment in Domestic Capital Formation, 1959-1965: 1965-1975

Item	1959-1965		1965-1975
	Hypothesis A	Hypothesis B	
Capital Formation	6,574	7,771	21,092
Net Increase in Foreign Investment	1,086	2,226	560
Foreign Investment as Percent of Capital Formation	16.52	28.65	2.66

III. INTEGRATION OF PROJECTIONS: AN INPUT-OUTPUT MODEL OF THE PHILIPPINE ECONOMY; AND THE ROLE OF THE SELECTED AGRICULTURAL COMMODITIES.

The series of projections presented in the foregoing section constitute the bases for the determination of the level and composition of consumer goods expenditures, which in turn determine the pattern of production and investments in the economy. The present section of this summary volume represents a systematic integration of all the results of the various projections prepared in connection with the ultimate objective of assessing long-run import requirements for selected agricultural commodities.

In general, two important aspects of the overall objective are presented. First, the results of the previous analysis (Part II) as well as those derived from a detailed examination of the demand for the selected agricultural commodities and their products (presented in Part IV) are used extensively in determining the level and composition of consumer and capital goods expenditures. In order to complete the analysis, estimates were also prepared of the possible demand for other various types of consumer and capital goods expenditures. Although not directly related to the agricultural commodities under specific consideration, they represent important segments of the economy and play dominant roles in determining the future patterns of production and investments.

Second, given the projected composition of the total final demand, systematic calculations are made to determine the requirements for domestic production and the requirements for imports. Once the requirements for domestic production are determined, one needs to compute for the needs of the economy for raw materials and intermediate products in order to sustain the requirements for domestic production. These estimates were then compared with the expected supplies that would be forthcoming from domestic production itself (Part V indicates domestic production levels for the selected agricultural commodities), and those from imports. The supplies that could be expected to come from domestic production are limited by the extent to which overall productive capacity can be expected to increase. Those that may be imported are limited by the projected capacity to import.

Thus, this summary presents the important feature of the methodology adopted for the present study, and incorporates the demand and supply analyses for the selected agricultural commodities together with the basic aggregative growth projections in the previous sections. At the same time, the sectoral projections provide the basis for correcting and adjusting the overall projections with the aim in view of completing a consistent picture of the projected structure of the Philippine economy.

It may be useful to indicate at the outset the extensive contribution to gross product of the selected agricultural production of the commodities under particular consideration and the industrial processing of products made from them (Table III-1).

Table III-1.--Contribution to Gross Product of Eight Agricultural Commodities and Their Products, 1956

(In Thousand Pesos)

ITEM	Gross Value Added
Agricultural Commodities:	
Palay	561,594
Corn	102,550
Cotton	160
Virginia Tobacco	37,167
Native Tobacco	6,348
Slaughter Houses (including home slaughtering)	311,697
Livestock and Dairy	642,109
Wheat	-
Tallow	-
Total	1,661,625
Commodities and Manufactures: Processed Agricultural	
Preserved, Prepared Meat	407
Dairy Products	5,465
Rice Milling	48,961
Corn Milling	4,295
Bakery	34,552
Vermicelli and Noodles	605
Starch and By-Products	2,817
Tobacco	70,910
Cotton Textile Mills	16,692
Knitting Mill Products	12,113
Wearing Apparel	27,261
Total	224,078
Grand Total	1,885,703
Gross Domestic Product, 1956:	9,537,000
Total Agricultural Commodities and Manufactures as Percent of Gross Product	19.77%

Source: EDC. On the Basis of Official Statistics.

Together these products contributed about one-fifth of the aggregative gross product of the country in 1956 (almost double the combined contribution of the whole manufacturing sector). In terms of the total agricultural crop production, the agricultural crops under particular study account for almost half of the total (Table III-2).

Table III-2.--Selected Agricultural Crops in Relation to Other Domestic Crops, in Terms of Hectarage and Value of Production at Current Prices, 1939 and 1959

(In Thousands)

Selected Agricultural Crops	1939		1959	
	Hectares Planted to Crop	Value of Production	Hectares Planted to Crop	Value of Production
Total for all Agricultural Crops	5,094	P 358,206	7,910	P 1,808,930
A. Amounts:				
1. Rice	1,830	152,229	2,971	705,100
2. Corn	817	18,713	1,336	134,300
3. Wheat	-	-	-	-
4. Cotton (1940)	2	52	4	413
5. Tobacco	58	3,532	91	63,482
B. Percent of Total Agricultural Crops:				
1. Rice	35.9	42.5	37.5	39.0
2. Corn	16.0	5.2	16.9	7.4
3. Wheat	-	-	-	-
4. Cotton	a/	a/	a/	a/
5. Tobacco	1.1	1.0	1.1	3.5

a/ Less than 1 percent.

Source of Basic Data: Agricultural Economics Division, DANR.

For this reason, it was felt advisable not to ignore completely the relationships between the selected agricultural commodities and the rest of the economy. Thus, an interindustry table has been constructed, which depicts the role of the eight agricultural commodities within the overall economic structure. Also, by the interindustry approach, it becomes feasible to integrate clearly the demand projections with the supply projections.

To be sure, the approach adopted by this study was not without some difficulty, and the resources available have imposed constraints to fulfilling all intensive requirements of the interindustry analysis. However, it is difficult to see how any extensive study can afford any other method of investigation.

The method adopted has also rendered it necessary to proceed in successive estimations, and in order to complete the required analysis, to postulate some rather severe assumptions regarding certain important variables which could not be examined in greater detail due to resource limitations.

A. Projections of the Level and Composition of Final Demand

Projections of household expenditures.--While the preceding projections of the gross income afforded the basis for determining aggregate household demand by means of a computed marginal propensity to consume of 0.815, the detailed projections of the demand for eight agricultural commodities and their products (discussed in Part IV) somewhat facilitated an assessment of the structure and composition of household expenditures, since these products already constituted a substantial proportion of household expenditures--about 41 percent in 1956.

In general, two broad categories of household expenditures were considered, that is, food and nonfood expenditures. For an assessment of the growth in these two types of consumer expenditures, income elasticities of demand computed from the results of the 1957 Philippine Statistical Survey of Households were utilized. Although, in general, income elasticity of demand is defined as the result of a given change in income, the independent variable that was used for the purpose of the present analysis was total household expenditures in order that the assessment of food and nonfood expenditures would be consistent with the initial projection of aggregate household consumption expenditures.

The general conclusion arrived at in this connection is that the income elasticity of food tends to be lower than that for nonfood, being .79 for the former and 1.18 for the latter. While this conclusion appeared to be reasonable, the actual coefficient derived for food was somewhat higher than similar coefficients derived in other countries. The average coefficient for food expenditures in the ECAFE region as a whole, for instance, was 0.72, while that for Colombia was only 0.50. In this regard it is to be noted that the per capita diet for the majority of the population in the Philippines is considerably below minimum nutritional standards, so that an increase in per capita income is generally accompanied by a relatively high proportion of increase in food consumption. Moreover, for the same reason, it is likely that no decrease will occur in this proportion within the next 15 years.

Within the projections of the total food and nonfood expenditures derived on the basis of the above coefficients, the composition of each of the two categories was essentially derived from the analysis of demand for selected agricultural commodities and their products, while the balance of the other commodities not included in the demand analysis was simply prorated within their respective categories on the basis of base-year proportions.

One other aspect of the methods employed in these projections is worth noting. In the projections of demand, specifically for the eight agricultural commodities and their products, the multiplicity of forms in which the various commodities were consumed necessitated conversion into their raw equivalent. For instance, the physical volume of demand for the various types of cotton textiles has been expressed in terms of raw cotton equivalent. To facilitate conversion of these projections in terms of expenditures for each of the commodity groups analyzed, the projected growth in demand was expressed in index numbers (1956 base), computed by dividing the projected quantities of demand in raw equivalent by the corresponding figure for demand in 1956. These indices were then applied to the corresponding expenditures in the base year, thereby deriving the project expenditures at 1956 prices. 33/ (The summary of the projections of the composition of household demand is presented in Table III-3).

33/ The obvious limitation of this procedure is the implied assumption that the products subsumed within each commodity group are demanded proportionately. Hence, disaggregation into as fine a detail as possible became extremely important.

Table III-3. -- Projections of Household Final Demand

(Thousand Pesos at 1956 Prices)

Sectors Producing	1956		Projected		
			1965		
	Amount	Per Cent Distribution	Hypothesis A	Hypothesis B	1975
Foodstuffs	3,240,410	100.000	5,278,413	5,401,739	8,614,539
1 Palay	168,717	5.207	131,523	131,252	113,169
2 Corn	13,168	.406	12,899	15,177	19,899
6 Livestock, Poultry, Dairy	516,261	15.932	1,000,212	1,035,487	1,826,695
7 Other Agricultural	348,744	10.762	848,582	886,508	1,666,489
8 Fishing	428,194	13.214	603,754	608,892	886,790
11 Slaughter Houses	647,963	19.996	825,181	833,928	1,214,283
12 Prepared and Preserved Meat	19,554	.603	57,974	73,159	107,899
13 Dairy Products	94,137	2.905	128,843	131,368	206,295
14 Rice Mills	624,377	19.268	987,894	985,973	1,369,706
15 Corn Mills	88,123	2.720	92,701	92,419	148,905
16 Other Grain Mills	441	.014	747	759	1,176
17 Bakery	106,631	3.291	180,739	183,512	284,385
18 Vermicelli and Noodles	2,395	.074	6,507	6,598	9,956
19 Vegetable Lard and Margarine	24,067	.743	58,564	61,181	115,011
21 Starch and By-Prods.	8,389	.259	10,947	10,958	14,872
22 Preserved Fish	31,095	.960	43,844	44,217	64,398
23 Other Food Mfs.	118,154	3.646	287,502	300,351	564,611
Nonfood	3,297,991	100.000	5,783,633	5,989,973	10,393,128
5 Native Tobacco	4,669	.141	5,058	6,139	7,821
9 Forestry	195,132	5.917	335,145	347,739	622,518
24 Beverages	179,258	5,435	307,880	319,449	571,874
25 Tobacco Products	168,110	5.097	342,944	360,764	514,248
26 Cotton Textile	101,128	3.066	154,190	156,809	236,045
27 Other Textile Mills	43,359	1.315	66,109	67,237	101,200
28 Knitting Mills	40,207	1.219	61,308	62,341	93,819
29 Cordage, Rope and Twine	11,867	.360	20,380	21,147	37,856
30 Other Textile Manufact.	4,469	.136	7,673	7,961	14,252
31 Footwear	36,174	1.097	62,127	64,461	115,398
32 Wearing Apparel	71,545	2.169	109,085	110,930	166,979
33 Soap and Other Cleansers	71,683	2.174	240,468	240,754	348,917
34 Other Chemicals	108,129	3.279	185,712	192,690	344,952
35 Mechanical and Metallurgical	164,776	4.996	283,007	293,641	525,674
36 Other Manufactures	217,589	6.598	373,716	387,758	694,161

--Continued

Table III-3. -- Projections of Household Final Demand -- Continued

(Thousand Pesos at 1956 Prices)

Sectors Producing	1956		Projected		
			1965		
	Amount	Per Cent Distribution	Hypothesis A	Hypothesis B	1975
38 Trade, Transport, Services	1,706,500	51.744	2,931,016	3,041,148	5,444,236
39 Fuel and Energy	64,293	1.949	110,426	114,575	205,111
Custom Duties	109,103	3.308	187,389	194,430	348,067
Statistical Discrepancy	814,819	-	-	-	-
Total Purchases From Business	7,353,220		11,062,046	11,391,712	19,007,667
Personal Services	494,000		742,682	764,815	1,276,133
Foreign Travel	26,780		40,272	41,473	69,200
Total Consumption	7,874,000		11,845,000	12,198,000	20,353,000

Thus, from the Table, the projections imply that the proportion of food consumption to total household expenditures will decline only moderately from 46 percent in 1956 to 44 percent in 1965 and 42 percent in 1975. Mainly due to inadequacy in the procedure for projecting final household demand for other foodstuffs, the proportion of consumption of food commodities under particular study to total food consumption will decline from 61.6 percent in 1956 to 51.5 percent in 1965 and 45.4 percent in 1975 (Table III-4).

Table III-4.--Projections of the Composition of Food Consumption
(Thousand Pesos at 1956 Prices)

	1956		1965		1975	
	Amount	%	Amount	%	Amount	%
Total Food Consumption	3,240,410	100.0	5,278,413	100.0	8,614,539	100.0
Agricultural Commodities & Products	1,995,098	61.6	2,718,216	51.5	3,907,290	45.4
Rice & Corn	894,385	27.6	1,225,017	23.2	1,651,679	19.2
Meat & Meat Products	888,720	27.4	1,165,416	22.1	1,738,927	20.2
Others	211,993	6.6	327,783	6.2	516,684	6.0
Other Foodstuffs	1,245,312	38.4	2,560,197	48.5	4,707,249	54.6

Of these commodities, the proportion of rice and corn consumption to total food consumption will decline from 27.6 percent in 1956 to 23.2 percent and 19.2 percent for 1965 and 1975 respectively.

In contrast to this, the proportion of consumption of "other foodstuffs"--consisting mostly of root crops, vegetable, fruits, nuts, sugar and fish--will increase from 38 percent in 1956 to 48.5 percent in 1965, and 54.6 percent in 1975.

Projections of other final demand.--While household expenditures account for about 70 percent of total final demand, exports, government expenditures on current and capital account, as well as business purchases of capital goods and net additions to stocks account for the balance of 30 percent.

The projections of the volume and composition of merchandise exports, as indicated in the preceding section, were based on an analysis of world demand for 7 principal commodities which account for about 85 percent of total exports. The projections of exports of the minor commodities were based mainly on the assumption that their growth will follow that of the major commodities. To derive the composition of other final demand (inventory change, capital goods, government), the aggregate figures derived from the previous section were simply prorated to their components in the base year. The results of these computations are shown in Table III-5.

Table III-5. -- Summary of Projections of Final Demand, 1965, Hypotheses A and B, and 1975

(Thousand Pesos at 1956 Prices)

Sectors	Total Final Demand	Net Change in Stocks	Fixed Investments	Exports	Government	Households
1965-Hypothesis A (1.5 %)						
1. Palay	133,601	2,076		2		131,523
2. Corn	14,400	1,501				12,899
3. Cotton	498	489		9		-
4. Virginia Tobacco	1,226	1,218		8		-
5. Native Tobacco	14,143	326		8,759		5,058
6. Livestock, Poultry, Dairy	1,055,398	54,170		1,016		1,000,212
7. Other Agricultural	1,227,454	24,968		353,904		848,582
8. Fishing and Hunting	604,369	-		615		603,754
9. Forestry	587,408	5,438	63,690	183,135		335,145
10. Mining	293,939	15,352		278,587		-
11. Slaughter Houses	825,393	-		212		825,181
12. Preserved, Prepared Meat	57,982	8		-		57,974
13. Dairy Products	128,851	8		-		128,843
14. Rice Mill Products	993,372	3,868		1,610		987,894
15. Corn Mill Products	93,853	626		526		92,701
16. Other Grain Mill Products	6,805	6,056		2		747
17. Bakery Products	180,754	8		7		180,739
18. Vermicelli and Noodles	6,525	17		1		6,507
19. Vegetable Lard and Margarine	58,965	120		281		58,564
20. Prepared Animal Feeds	12	12		-		-
21. Starch and By-Products	10,955	8		-		10,947
22. Preserved Fish Products	43,996	8		144		43,844
23. Other Food Manufactures	613,143	506		325,135		287,502
24. Beverages	311,705	120		3,705		307,880
25. Tobacco Products	350,618	2,641		5,033		342,944
26. Cotton Textile Mills	154,467	68		209		154,190
27. Other Textile Mill Products	66,481	283		89		66,109
28. Knitting Mill Products	61,376	68		-		61,308
29. Cordage, Rope and Twine	25,885	68		5,437		20,380
30. Other Textile Manufactures	9,628	17		1,938		7,673
31. Footwear	62,296	94		75		62,127
32. Wearing Apparel, etc.	144,820	480		35,255		109,085
33. Soap and Other Cleansers	240,608	68		72		240,468
34. Other Chemical Products	251,831	772		65,347		185,712
35. Mechanical and Metallurgical	644,272	317	352,880	8,068		283,007
36. Other Manufactured Products	442,123	583		22,050	45,774	373,716
37. Construction	664,950	-	664,950			-
38. Trade, Transport and Services	3,252,787	8		16,769a/	304,994	2,931,016
39. Fuel and Energy	112,768	189			2,153	110,426
Customs Duties	207,310	1,441	18,480	-		187,389
Total Purchases From:						
Business	13,956,967	124,000	1,100,000	1,318,000	352,921	11,062,046
Personal Services	1,686,602	-	-	-	943,920	742,682
Direct Purchases from Abroad	54,431	-	-	-	14,159	40,272
Total Expenditures	15,698,000	124,000	1,100,000	1,318,000	1,311,000	11,845,000

a/ Includes freight, insurance, miscellaneous services and tourist expenditures.

Table III - 5. -- Summary of Projections of Final Demand, 1965, Hypotheses A and B, and 1975 (continued)

(Thousand Pesos at 1956 Prices)

Sectors	Total Final Demand	Net Change in Stocks	Fixed Investments	Exports	Government	Households
1965 - Hypothesis B (2.0%)						
1. Palay	133,122	1,868		2		131,252
2. Corn	16,527	1,350		-		15,177
3. Cotton	449	440		9		-
4. Virginia Tobacco	1,104	1,096		8		-
5. Native Tobacco	15,191	293		8,759		6,139
6. Livestock, Poultry, Dairy	1,090,673	54,170		1,016		1,035,487
7. Other Agricultural	1,262,876	22,464		353,904		886,508
8. Fishing and Hunting	609,507	-		615		608,892
9. Forestry	613,584	4,892	77,818	183,135		347,739
10. Mining	292,400	13,813		278,587		-
11. Slaughter Houses	834,140	-		212		833,928
12. Preserved, Prepared Meat	73,166	7		-		73,159
13. Dairy Products	131,375	7		-		131,368
14. Rice Mill Products	991,063	3,480		1,610		985,973
15. Corn Mill Products	93,508	563		526		92,419
16. Other Grain Mill Products	6,210	5,449		2		759
17. Bakery Products	183,526	7		7		183,512
18. Vermicelli and Noodles	6,615	16		1		6,598
19. Vegetable Lard and Margarine	61,570	108		281		61,181
20. Prepared Animal Feeds	12	12		-		-
21. Starch and By-Products	10,965	7		-		10,958
22. Preserved Fish Products	44,368	7		144		44,217
23. Other Food Manufactures	625,941	455		325,135		300,351
24. Beverages	323,262	108		3,705		319,449
25. Tobacco Products	368,174	2,377		5,033		360,764
26. Cotton Textile Mills	157,080	62		209		156,809
27. Other Textile Mill Products	67,580	254		89		67,237
28. Knitting Mill Products	62,403	62		-		62,341
29. Cordage, Rope and Twine	26,646	62		5,437		21,147
30. Other Textile Manufactures	9,915	16		1,938		7,961
31. Footwear	64,621	85		75		64,461
32. Wearing Apparel, etc.	146,617	432		35,255		110,930
33. Soap and Other Cleansers	240,888	62		72		240,754
34. Other Chemical Products	258,731	694		65,347		192,690
35. Mechanical and Metallurgical	733,149	285	431,155	8,068		293,641
36. Other Manufactured Products	456,106	524		22,050	45,774	387,758
37. Construction	812,448		812,448			-
38. Trade, Transport and Services	3,362,918	7		16,769a/	304,994	3,041,148
39. Fuel and Energy	116,898	170			2,153	114,575
Customs Duties	218,305	1,296	22,579			194,430
Total Purchases From:						
Business	14,523,633	117,000	1,344,000	1,318,000	352,921	11,391,712
Personal Services	1,708,735	-	-	-	943,920	764,815
Direct Purchases from Abroad	55,632	-	-	-	14,159	41,159
Total Expenditures	16,288,000	117,000	1,344,000	1,318,000	1,311,000	12,198,000

a/ Includes freight, insurance, miscellaneous services and tourist expenditures.

Table III - 5. -- Summary of Projections of Final Demand, (continued)
1965, Hypotheses A and B, and 1975

(Thousand Pesos at 1956 Prices)

Sectors	Total Final Demand	Net Change in Stocks	Fixed Investments	Exports	Government	Households
1975 (2.0%)						
1. Palay	120,328	7,156		3		113,169
2. Corn	25,072	5,173		-		19,899
3. Cotton	1,697	1,685		12		-
4. Virginia Tobacco	4,209	4,199		10		-
5. Native Tobacco	20,052	1,122		11,109		7,821
6. Livestock, Poultry, Dairy	1,926,268	98,284		1,289		1,826,695
7. Other Agricultural	2,183,192	86,072		430,631		1,666,489
8. Fishing and Hunting	887,570	-		780		886,790
9. Forestry	948,399	18,745	134,733	172,403		622,518
10. Mining	491,308	52,923		438,385		-
11. Slaughter Houses	1,214,552	-		269		1,214,283
12. Preserved, Prepared Meat	107,927	28		-		107,899
13. Dairy Products	206,323	28		-		206,295
14. Rice Mill Products	1,385,081	13,333		2,042		1,369,706
15. Corn Mill Products	151,729	2,157		667		148,905
16. Other Grain Mill Products	22,055	20,876		3		1,176
17. Bakery Products	284,423	29		9		284,385
18. Vermicelli and Noodles	10,017	59		2		9,956
19. Vegetable Lard and Margarine	115,781	414		356		115,011
20. Prepared Animal Feeds	34	34		-		-
21. Starch and By-Products	14,900	28		-		14,872
22. Preserved Fish Products	64,609	29		182		64,398
23. Other Food Manufactures	974,601	1,744		408,246		564,611
24. Beverages	576,989	415		4,700		571,874
25. Tobacco Products	529,737	9,105		6,384		514,248
26. Cotton Textile Mills	236,546	236		265		236,045
27. Other Textile Mill Products	102,288	975		113		101,200
28. Knitting Mill Products	94,055	236		-		93,819
29. Cordage, Rope and Twine	44,988	236		6,896		37,856
30. Other Textile Manufactures	16,769	59		2,458		14,252
31. Footwear	115,817	324		95		115,308
32. Wearing Apparel, etc.	213,348	1,654		44,715		166,979
33. Soap and Other Cleansers	349,244	236		91		348,917
34. Other Chemical Products	430,494	2,659		82,883		344,952
35. Mechanical and Metallurgical	1,283,501	1,093	746,502	10,232		525,674
36. Other Manufactured Products	794,175	2,009		34,739	63,266	694,161
37. Construction	1,406,671	-	1,406,671	-		-
38. Trade, Transport and Services	5,886,843	28		21,031[a]	421,548	5,444,236
39. Fuel and Energy	208,738	651			2,976	205,111
Customs Duties	392,127	4,966	39,094			348,067
Total Purchases From:						
Business	23,842,457	339,000	2,327,000	1,681,000	487,790	19,007,667
Personal Services	2,580,773	-	-	-	1,304,640	1,276,133
Direct Purchases from Abroad	88,770	-	-	-	19,570	69,200
Total Expenditures	26,512,000	339,000	2,327,000	1,681,000	1,812,000	20,353,000

a/ Includes freight, insurance, miscellaneous services and tourist expenditures.

Import substitution.--Finally, it remained to settle the proportion of final demand that would be met by domestic production and the proportion that would have to be imported. For the most part, the supply analysis (discussed in Part V) provided the basic hypotheses concerning the extent of import substitution that could be attained for products of the commodities under study. Thus, it has been assumed that virtually all of final demand for cotton textiles, tobacco, and wheat flour could be met from domestic production by 1965 and, certainly, by 1975. In the case of cotton textiles, this assumption implies a substantial reduction in imports of finished cloth which accounted for about 53 percent of total final demand in 1956. Under the assumption postulated, imports will account for only 10 percent of final demand by 1965.

The assumption regarding the projections of final demand for processed and preserved meat is worth further comment. Due mainly to substantial imports of corned beef in the past decade, imports of processed meat accounted for 91 percent of final demand for processed meat in 1956. As indicated in the section on the supply analysis, the entry of a large meat processing plant which intends to import cattle on-the-hoof from Australia, may reduce substantially the amount of processed meat imports within the next few years. Thus, the assumption implies an increase in final demand for domestically produced processed (or prepared and preserved) meat products in 1956 to more than 82 percent by 1965 (Table III-6).

For the other sectors not under particular study, the only consideration taken with respect to import substitution was the possible contribution which the proposed integrated steel mill may have on the domestic production to meet final demand for mechanical and metallurgical products. Since 1956, there have already been increases in production of pipes, electrical supplies and construction materials. The assumption taken in this case postulated an increase in final demand for domestic production from 28 percent in 1956 to 35 percent in 1965 and 45 percent in 1975. For the rest of the commodities for which domestic production already accounted for the greater part, the proportions of imports in the base year were simply maintained for the projection period. Table III-6 summarizes the estimates of final demand for 1965 and 1975 from domestic production and imports.

Table III-6. -- Ratio of Domestic and Imported Final Demand to Total Final Demand, By Sector. 1965 A, B and 1975
(Thousand Pesos at 1956 Prices)

Sectors	Domestic		Imported		Total
	Amount	Percent	Amount	Percent	
1965--A					
1. Palay	133,601	100.00	-	-	133,601
2. Corn	14,400	100.00	-	-	14,400
3. Cotton	-	-	498	100.00	498
4. Virginia Tobacco	1,226	100.00	-	-	1,226
5. Native Tobacco	14,143	100.00	-	-	14,143
6. Livestock, Poultry, Dairy	1,051,387	99.62	4,011	0.38	1,055,398
7. Other Agricultural	1,213,338	98.85	14,116	1.15	1,227,454
8. Fishing and Hunting	604,248	99.98	121	0.02	604,369
9. Forestry	584,353	99.48	3,055	0.52	587,408
10. Mining	285,385	97.09	8,554	2.91	293,939
11. Slaughter Houses	813,425	98.55	11,968	1.45	825,393
12. Preserved and Prepared Meat	47,771	82.39	10,211	17.61	57,982
13. Dairy Products	65,018	50.46	63,833	49.54	128,851
14. Rice Mill Products	993,372	100.00	-	-	993,372
15. Corn Mill Products	93,853	100.00	-	-	93,853
16. Other Grain Mill Products	6,805	100.00	-	-	6,805
17. Bakery Products	180,284	97.74	470	0.26	180,754
18. Vermicelli and Noodles	6,525	100.00	-	-	6,525
19. Vegetable Lard and Margarine	58,953	99.98	12	0.02	58,965
20. Prepared Animal Feeds	12	100.00	-	-	12
21. Starch and By-Products	10,543	96.24	412	3.76	10,955
22. Preserved Fish Prod.	4,400	10.00	39,596	90.00	43,996
23. Other Food Mftrs.	588,311	95.95	24,832	4.05	613,143
24. Beverages	304,660	97.74	7,045	2.26	311,705
25. Tobacco Products	342,554	97.70	8,064	2.30	350,618
26. Cotton Textile Mills	139,020	90.00	15,447	10.00	154,467
27. Other Textile Mill Prod.	33,240	50.00	33,241	50.00	66,481
28. Knitting Mill Products	61,290	99.86	86	0.14	51,376
29. Cordage, Rope and Twine	23,297	90.00	2,588	10.00	25,885
30. Other Textile Manufac.	6,740	70.00	2,888	30.00	9,628
31. Footwear	61,312	98.42	984	1.58	62,296
32. Wearing Apparel, etc.	138,824	95.86	5,996	4.14	144,820
33. Soap and Other Cleansers	238,298	99.04	2,310	0.96	240,608
34. Other Chemical Products	190,409	75.61	61,422	24.39	251,831
35. Mech'cal and Metall'cal	225,495	35.00	418,777	65.00	644,272
36. Other Mftr. Products	353,698	80.00	88,425	20.00	442,123
37. Construction	664,950	100.00	-	-	664,950
38. Trade, Transport and Serv.	3,191,033	98.10	61,754	1.90	3,252,787
39. Fuel and Energy	112,768	100.00	-	-	112,768
Customs Duties			207,310		207,310
Total	12,858,941		1,098,026		13,956,967

Table III-6. -- Ratio of Domestic and Imported Final Demand to Total Final Demand, By Sector. 1965 A, B and 1975 (continued)

Sectors	Domestic		Imported		Total
	Amount	Percent	Amount	Percent	
1965--B					
1. Palay	133,122	100.00	-	-	133,122
2. Corn	16,527	100.00	-	-	16,527
3. Cotton	-	-	499	100.00	449
4. Virginia Tobacco	1,104	100.00	-	-	1,104
5. Native Tobacco	15,191	100.00	-	-	15,191
6. Livestock, Poultry, Dairy	1,086,528	99.62	4,145	0.38	1,090,673
7. Other Agricultural	1,248,353	98.85	14,523	1.15	1,262,876
8. Fishing and Hunting	609,383	99.98	122	0.02	609,507
9. Forestry	610,393	99.48	3,191	0.52	613,584
10. Mining	283,891	97.09	8,509	2.91	292,400
11. Slaughter Houses	822,045	96.55	12,095	1.45	834,140
12. Preserved and Prepared Meat	60,281	82.39	12,885	17.61	73,166
13. Dairy Products	66,292	50.46	65,083	49.54	131,375
14. Rice Mill Products	991,063	100.00	-	-	991,063
15. Corn Mill Products	93,508	100.00	-	-	93,508
16. Other Grain Mill Products	6,210	100.00	-	-	6,210
17. Bakery Products	183,049	99.74	477	0.26	183,526
18. Vermicelli and Noodles	6,615	100.00	-	-	6,615
19. Vegetable Lard and Margarine	61,558	99.98	12	0.02	61,570
20. Prepared Animal Feeds	12	100.00	-	-	12
21. Starch and By-Products	10,555	96.24	412	3.76	10,965
22. Preserved Fish Prod.	4,437	10.00	39,931	90.00	44,368
23. Other Food Mftrs.	600,594	95.95	25,351	4.05	625,941
24. Beverages	315,955	97.74	7,306	2.26	323,262
25. Tobacco Products	359,705	97.70	8,468	2.30	368,174
26. Cotton Textile Mills	141,371	90.00	15,708	10.00	157,080
27. Other Textile Mill Prod.	33,791	50.00	33,790	50.00	67,580
28. Knitting Mill Products	62,316	99.86	87	0.14	62,403
29. Cordage, Rope and Twine	23,981	90.00	2,665	10.00	26,646
30. Other Textile Manufac.	6,940	70.00	2,975	30.00	9,915
31. Footwear	63,601	98.42	1,021	1.58	64,621
32. Wearing Apparel, etc.	140,541	95.86	6,070	4.14	146,617
33. Soap and Other Cleansers	238,575	99.04	2,313	0.96	240,888
34. Other Chemical Products	195,621	75.61	63,104	24.39	258,731
35. Mech'cal and Metall'cal	329,917	35.00	403,232	65.00	733,149
36. Other Mftr. Products	364,885	80.00	91,221	20.00	456,106
37. Construction	812,445	100.00	-	-	812,448
38. Trade, Transport and Serv.	3,301,445	98.17	61,473	1.83	3,362,918
39. Fuel and Energy	116,896	100.00	-	-	116,898
Customs Duties			218,305		218,305
Total	13,418,710		1,104,923		14,523,633

Table III-6. -- Ratio of Domestic and Imported Final Demand to Total Final Demand, By Sector. 1965 A, B and 1975 (continued)

Sectors	Domestic		Imported		Total
	Amount	Percent	Amount	Percent	
1975					
1. Palay	120,328	100.00	-	-	120,328
2. Corn	25,072	100.00	-	-	25,072
3. Cotton	-	-	1,697	100.00	1,697
4. Virginia Tobacco	4,209	100.00	-	-	4,209
5. Native Tobacco	20,052	100.00	-	-	20,052
6. Livestock, Poultry, Dairy	1,918,948	99.62	7,320	0.38	1,926,268
7. Other Agricultural	2,158,085	98.85	25,107	1.15	2,183,192
8. Fishing and Hunting	887,392	99.98	178	0.02	887,570
9. Forestry	943,467	99.48	4,932	0.52	948,399
10. Mining	477,011	97.09	14,297	2.91	491,308
11. Slaughter Houses	1,196,941	98.55	17,611	1.45	1,214,552
12. Preserved and Prepared Meat	107,927	100.00	-	-	107,927
13. Dairy Products	104,111	50.46	102,212	49.54	206,323
14. Rice Mill Products	1,385,081	100.00	-	-	1,385,081
15. Corn Mill Products	151,729	100.00	-	-	151,729
16. Other Grain Mill Products	22,055	100.00	-	-	2,055
17. Bakery Products	283,684	99.74	739	0.26	284,423
18. Vermicelli and Noodles	10,017	100.00	-	-	10,017
19. Vegetable Lard and Margarine	115,758	99.98	23	0.02	115,781
20. Prepared Animal Feeds	34	100.00	-	-	34
21. Starch and By-Products	14,340	96.24	560	3.76	14,900
22. Preserved Fish Prod.	12,922	20.00	51,687	80.00	64,609
23. Other Food Mftrs.	935,130	95.95	39,471	4.05	974,601
24. Beverages	563,949	97.74	13,040	2.26	576,989
25. Tobacco Products	517,553	97.70	12,184	2.30	529,737
26. Cotton Textile Mills	236,546	100.00	-	-	236,546
27. Other Textile Mill Prod.	71,602	70.00	30,686	30.00	102,288
28. Knitting Mill Products	93,923	99.86	132	0.14	94,055
29. Cordage, Rope and Twine	40,489	90.00	4,499	10.00	44,988
30. Other Textile Manufac.	13,415	80.00	3,354	20.00	16,769
31. Footwear	113,987	98.42	1,830	1.58	115,817
32. Wearing Apparel, etc.	204,515	95.86	8,833	4.14	213,348
33. Soap and Other Cleansers	345,891	99.04	3,353	0.96	349,244
34. Other Chemical Products	325,497	75.61	104,997	24.39	430,494
35. Mech'cal and Metall'cal	577,575	45.00	705,926	55.00	1,283,501
36. Other Mftr. Products	714,758	90.00	79,417	10.00	794,175
37. Construction	1,406,671	100.00	-	-	1,406,671
38. Trade, Transport and Serv.	5,794,910	98.44	91,933	1.56	5,886,843
39. Fuel and Energy	208,738	100.00	-	-	208,738
Customs Duties			392,127		392,127
Total	22,124,312		1,718,145		23,842,457

B. Projections of Domestic Production and Requirements for Capital Goods, Raw Materials and Intermediate Products

One of the important aspects of the projections of the gross product to 1965 and 1975 is the growth requirement in the availabilities of raw materials, intermediate products and capital goods which would be needed to sustain domestic production. The availabilities of production requirements will determine ultimately the final growth that would be feasible.

For the purpose of determining production requirements to meet the growth postulated for the gross product, extensive research was made on interindustrial transactions in the Philippine economy. Essentially this entailed research in the composition of input in each sector of the economy and the purchases made from each of the other sectors before a given volume of production could be attained. Moreover, distinction was consistently maintained between domestic production and goods which were to be imported, so that the evaluation of future import requirements could be facilitated and so the specific effects of import substitution by domestic raw material could be separately assessed.

By means of the input-output table, calculations could be made of the requirements of each type of intermediate goods per unit of production in each of the sectors in the economy. Moreover, the required production levels themselves could be determined, given the level of final demand for domestic products, by calculating for the coefficients of direct and indirect requirements per unit of final demand. Such coefficients enable the determination of the total production of each sector in response to a given composition of final demand.

For the specific purposes of this study, the input-output table was constructed in order to give the total production (and/or import) requirements for the eight agricultural commodities in particular and the other sectors in general, given the composition of the projected level of final demand.

Once the production levels were determined for each of the sectors in the economy, assessment was made of the possible evolution of the supplies of raw materials and capital goods that would be needed to meet these levels of production. Part of the requirements would, of course, come from domestic production, while the balance would have to be imported. However, the production requirements that would have to be imported, as well as the imported component of final demand, would have to be limited by the anticipated level of import capacity. Finally, estimates were made of the increases required in the domestic productive capacity of major sectors, so that the total investment needs could be compared with the total level of anticipated investments.

The interindustry table.--The interindustry table is premised on the distinction between transactions of the two following types: those conducted between enterprises, which involve raw materials and intermediate products; and those relating to end goods not due to undergo any subsequent transformation.

In the table, all goods consumed are classified according to the sector in which they are produced (producer industry) and according to whether they are imported or domestically produced. Thus the distribution of domestic production and of imports of each type of goods is shown horizontally. In the case of intermediate goods, classification is according to the industry consuming (consumer industry); whereas consumption of end goods is classified only into exports and domestic use. The latter include sales of each type of goods to households and government, as well as sales of capital goods for investment purposes and net changes in stocks of finished goods, work in process, and raw materials and supplies. 34/

Vertically, each of the entries in the cells under each of the consuming industries represent actual consumption of the type of goods by those industries in order to produce their own goods. The figures referring to domestic raw materials and intermediate products actually consumed represent sums paid out by the industries which consume them. Hence, their respective values do not correspond only to the producer factory values but also incorporate additional costs entailed by freight and marketing. Figures referring to consumption of imported goods, however, are valued at F.O.B. prices in the country of origin plus estimated domestic trade and transport margin paid out in securing them. All foreign insurance and freight paid out by the consuming industry in securing imported goods are entered under the import component of the "trade, transport and services" sector, while payments for customs duties are summarized at the bottom part of the table.

The sectors in the table represent the minimum required breakdowns for the specified purposes of the study. In general, it was deemed sufficient to depict sectoral breakdowns covering:

1. Industries producing the eight commodities;
2. Industries producing products of the eight agricultural commodities;
3. Industries not belonging to either of the above two, but consuming products of the eight commodities;

To complete the interindustry relations, other sectors in varying degrees of aggregation are also depicted, covering:

4. Industries supplying raw materials and energy to any or all of the industries covered in numbers (1) to (3) above;
5. Industries consuming products of and supplying raw materials to any or all of the industries in number (4);
6. Domestic trade, transportation and services.

The interindustry table for the 1956 base year is attached to this report as Table A. Projections under assumptions on import substitution of the interindustry relationships are shown in Tables B to E, also attached at the end of this report.

According to Table A, thus prepared, the total gross value of production 35/ of goods and services (excluding government and personal services) in the country, during 1956, amounted to more than P11.5 billion, of which about 39.2 percent was represented by the production of primary industries (agriculture and mining), 27.6 percent by manufacturing (including the fuel and energy industry), 5.4 percent by construction, and 27.8 percent by trade, transport and services industries.

Of the total domestic production of goods and services, about P3.25 billion--or only 28.2 percent--was used as raw material (that is, as intermediate products) by industries, and therefore did not enter the market for end goods (the latter representing the balance of about P8.26 billion). Of the market for end goods (final demand), exports accounted

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34/ These have already been presented in detail in separate tables on preceding pages.

35/ In this section, the term "gross value of production" indicates the value of output at accounting prices and is thus differentiated from the "gross product" by the amount of double counting of the raw material inputs. In this and the following paragraphs reference is to gross production at purchaser s price.

for about 12 percent, representing, in turn, a little less than 8 percent of the total gross value of production. Thus domestic production for final home use amounted to about P7.27 billion, of which capital goods and construction represented a little more than 10 percent, while the balance (amounting to more than P6.53 billion) represented the production of consumer goods.

Total imports of goods and services, valued at purchaser's cost excluding customs duties, amounted to about P1.43 billion, which constituted about 11 percent of the total supply of goods and services (gross production plus imports) during that year (1956). Of the total imports, manufactured goods accounted for more than 86 percent, while agricultural and mining products (including crude petroleum) accounted for slightly more than 5 percent. The rest represented imports of services, mostly insurance and freight disbursement on merchandise imports. About 39 percent of imports were consumed as raw material in domestic production, most of which--about 82 percent--were consumed by the manufacturing sector. 36/

The contribution of the selected agricultural commodities to total gross domestic product has already been indicated in the preceding pages. It may be worthwhile, at this point, to indicate the general relationship of the selected agricultural commodities under study to manufacturing activity. Much of the manufacturing activity in 1956 consisted of the processing of agricultural products from both domestic and foreign sources. Thus, total consumption of imported and domestically produced agricultural products by manufacturing amounted to P793,050,000, representing more than 37 percent of its total consumption of raw materials and intermediate goods. 37/ Of total consumption of agricultural products more than 73 percent consisted of seven of the eight agricultural commodities under study. Consumption of palay alone by rice mills represented more than 58 percent of the total consumption of agricultural commodities, and about 23 percent of total industrial consumption of raw materials and intermediate goods (Table III-7). While consumption of raw cotton was not significant in relation to other agricultural products during 1956, more recent years may show significant increases in the proportion due to the integration of the textile industry. The order of magnitude, in this connection, may be indicated by the fact that almost 16 percent of total industrial consumption of manufactured raw materials and intermediate goods was represented by consumption of semi-processed textile goods which were totally imported in that year. 38/ As domestic production of cotton yarn and cloth increases and displaces the greater part of these imports, a corresponding increase in the proportion of raw cotton consumption to total consumption of agricultural products will be obtained.

36/ A detailed analysis of the manufacturing sector was presented in the Second Progress Report, pp. 50-82.

37/ Of the total, consumption by food processing industries accounted for more than 33 percent, consisting principally of palay, sugarcane, copra and coconut, and corn.

38/ But if only large (20 or more workers) establishments are considered, the proportion is somewhat lower - about 36.9 percent. (See: "Second Progress Report", Project AGRECO, p. 62.) Imports valued at delivered costs including customs duties. (See: *Loc. cit.*, p.55.)

Table III-7.--Value of Industrial 1/ Consumption of Selected Agricultural Commodities (crude), and Percent Contribution to Total Industrial Consumption of Raw Material and Intermediate Products, 1956

Commodity	Value (Thousand Pesos at Purchaser's Price) 2/	Percent of Total Industrial Consumption of all Agricultural Products	Percent of Total Industrial Consumption of Raw Material and Intermediate Products
Palay	489,521	58.38	22.79
Corn (Shelled)	80,579	9.61	3.75
Cotton	6,536	.78	.30
Virginia Tobacco	32,067	3.82	1.49
Native Tobacco	5,568	.66	.26
Tallow 3/	664	.07	.03
Wheat	732	.09	.03
Dairy 4/	317	.04	.01
Total	615,984	73.46	28.68

1/ Refers to manufacturing and mining.

2/ Valued of imported raw materials consumed exclude customs duties.

3/ Under "Slaughter Houses" in the interindustry tables.

4/ Under "Livestock and Dairy".

Source of Basic Data: Table of Interindustry Flow of Goods and Services, 1956.

Projections of domestic production.--By means of the coefficients of direct and indirect requirements per unit of final demand computed from the interindustry table, 39/ the estimates of the composition of final demand have been used to determine domestic production requirements for each of the sectors considered. Once the domestic production requirements were determined, the needs for raw materials and intermediate goods were then derived by using the coefficients of input per unit of domestic production.

From the summary table (Table III-8), it may be seen that the gross value of production in the country will increase from P11.5 billion in 1956 to P17.9 billion in 1965 and P30.4 billion in 1975.

39/ The table of "interdependency coefficients" or of the inverse elements of the input matrix is attached to this report as Table F.

Table III-8.--Domestic Production Requirements to Meet Final Demand Levels,* 1956, 1965 (Hypothesis A) and 1975

(In Thousand Pesos at 1956 Prices)

Sectors	1956	1965 - A	1975
1. Palay	700,072	947,648	1,281,471
2. Corn	128,767	144,279	240,961
3. Cotton	255	385	600
4. Virginia Tobacco	36,632	62,439	96,711
5. Native Tobacco	18,677	24,990	36,424
6. Livestock, Poultry, Dairy	797,661	1,316,864	2,313,953
7. Other Agricultural	1,002,891	1,536,057	2,707,074
8. Fishing and Hunting	434,585	614,073	904,723
9. Forestry	310,319	754,277	1,288,226
10. Mining	231,725	312,186	531,603
11. Slaughter Houses	641,169	830,921	1,235,647
12. Preserved and Prepared Meat	1,711	47,771	107,927
13. Dairy Products	11,177	67,407	107,936
14. Rice Mill Products	673,191	1,051,944	1,488,692
15. Corn Mill Products	100,305	107,474	173,940
16. Other Grain Mill Products	1,779	11,301	29,126
17. Bakery Products	106,356	180,284	283,684
18. Vermicelli and Noodles	1,962	6,525	10,017
19. Vegetable Lard and Margarine	24,889	58,953	115,758
20. Prepared Animal Feeds	13,548	22,435	39,436
21. Starch and Byproducts	10,732	15,173	21,211
22. Preserved Fish Products	1,608	4,983	14,633
23. Other Food Manufactures	486,874	787,382	1,265,065
24. Beverages	178,508	304,660	563,949
25. Tobacco Products	186,314	353,009	533,349
26. Cotton Textile Mills	49,475	141,440	240,285
27. Other Textile Mills	24,862	36,727	77,353
28. Knitting Mills	44,954	67,888	103,922
29. Cordage, Rope and Twine	13,928	23,329	40,553
30. Other Textile Manufactures	3,292	7,202	14,318
31. Footwear	36,115	61,312	113,987
32. Wearing Apparel, etc.	110,596	158,058	233,261
33. Soap and Other Cleansers	71,369	238,298	345,891
34. Other Chemical Products	214,330	365,906	622,830
35. Mechanical and Metallurgical	209,597	314,487	746,104
36. Other Manufactures	412,365	626,681	1,242,052
37. Construction	626,000	664,950	1,406,671
38. Trade, Transport and Services	3,206,958	5,221,003	9,160,069
39. Fuel and Energy	186,358	358,408	633,832
Total	11,513,902	17,849,109	30,373,244

*For domestically produced goods. At this stage, import substitution has not been extended to intermediate goods.

Projections of requirements for raw materials and intermediate products.--As a starting point in the computations, requirements of raw materials and intermediate products to sustain the projected production, and the base year proportion of raw material and intermediate goods requirements were first maintained. This meant that the requirements for imports and domestically produced raw materials and intermediate goods would increase commensurately with the increase in domestic production, so that no import substitution would occur in the supplies for these types of goods. The results of these computations are shown in the attached tables (B and C) on the projected interindustry transactions for 1965 and 1975. Under this condition, the requirements for raw materials and intermediate products would increase from P3.9 billion in 1956 to more than P6 billion in 1965 and P10 billion in 1975. Of these totals, the requirements for imports (valued at domestic market prices) would rise from P680 million in 1956 to P1.1 billion in 1965 and more than P2 billion in 1975.

If these projections of import requirements for raw materials and intermediate goods (with no import substitution) are combined with the other requirements for imports to meet final demand, the total level of import requirements (at actual foreign exchange costs) for 1965 would amount to about P1,712 million (in 1956 prices), exceeding the projected capacity to import by about P259 million (Table III-9). This means an increase in the level of imports by 1965 of about 47 percent over 1956, and an increase of more than 66 percent within the following decade up to 1975, thereby increasing further the gap between import requirements and the capacity to import to more than 1 billion pesos.

Table III-9.--Import Requirements and the Capacity to Import

(In Thousand Pesos at 1956 Prices)

Item	1956	1965	1975
Import Requirements:			
For Final Demand (FOB)	620,821	785,459	1,179,310
For Intermediate Demand (FOB)	391,081	715,481	1,315,824
Total Merchandise Imports	1,011,902	1,500,940	2,495,134
Services:	156,106	211,170	352,203
Foreign Travel	26,780	40,272	69,200
Philippine Gov't. Expend.	11,100	14,159	19,570
Insurance and Freight	118,226	156,739	263,433
Total Requirements:	1,168,008	1,712,110	2,847,337
Capacity to Import	1,323,000	1,453,000	1,837,000
Surplus or (deficit)	154,992	(259,110)	(1,010,337)

Source: EDC estimates, on the basis of official Balance of Payments statistics.

Consequently, a great deal of effort towards import substitution in industries supplying raw materials and intermediate products is called for. To be sure, since 1956, great strides have already been taken towards this particular end. In the case of the cotton textile industry alone, one of the largest industries in this country, the growth in the productive capacity of the industry by mid-1961 has made it virtually self-sufficient in the requirements for cotton textiles.

In order to quantify the possible effects which import substitution may have on expansions of the availabilities of domestically produced raw materials and intermediate goods, a series of calculations were made using the information in the projected table of interindustry transactions without import substitution.

While limitations of resources precluded a more elaborate and detailed analysis of each of the sectors for possible substitution in the various input factors, four major sectors were considered mainly because they directly affected the final projections involving the eight agricultural commodities, or because their effects on the economy were deemed to be the more obvious. These sectors included: (1) cotton textiles, (2) wheat flour milling 40/, (3) dairy products, and (4) the integrated iron and steel industry.

The methods adopted in determining the effects of substituting domestic products for imported intermediate goods need some clarification. An expansion in domestic production for this purpose would naturally require in its turn a greater supply of raw materials and intermediate products, thereby starting a new chain reaction similar to that in the case of final demand. Adopted from similar methods used in the United Nations study of the Colombian economy, the procedure consisted in considering the amount of projected substitutions as an equivalent to a new or incremental-final demand for domestic products, and in determining what increases over gross production this implied by once again using the coefficients of direct and indirect requirements per unit of final demand. Since the interindustry analysis basically assumes constant input ratios so that import substitutions of raw materials input in their turn meant additional need for imports which it was planned to replace, it was necessary to proceed in successive stages of estimation by replaying these additional imports (through the"inverse matrix") until the final import components were reduced to desired levels. The final projected interindustry transactions to 1965 and 1975, under conditions of import substitution, are shown in Tables D and E.

C. Evaluation of the Growth of Gross Product, and Possible Structural Changes

While time and resources allowed for only a limited number of approximations, the results were deemed sufficient, for the specific purposes of the present study, to indicate general directions and orders of magnitudes from which certain qualified conclusions with regards to projections of the Philippine economy can be advanced.

1. Evaluation of the Rate of Growth of Gross Product

With only a limited extent of import substitution, gross domestic production would increase to P18.3 billion by 1965 and P30.9 billion by 1975, in contrast to the P17.9 billion

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40/ Under the sector called "Other Grain Mills" in the interindustry table.

in the case of no further import substitution for 1965 and P30.4 billion for 1975. These constitute increments in domestic production of about 2 percent for both 1965 and 1975 due to import substitution.

The projections imply an increase in the gross product of about 3.89 percent per annum from 1956 to 1965, and about 4.67 percent from 1956 to 1975 when no import substitution is considered. When limited import substitution is taken into account, however, the rate of growth increases to about 4.05 percent from 1956 to 1965 and about 4.72 percent from 1956 to 1975.

It will be recalled that the initial growth rate postulated for per capita gross product implied an aggregate rate of growth of 4.57 from 1956 to 1965 and 5.13 percent from 1956 to 1975. If sufficient import substitution were allowed--as would realistically be the case --and if resources permitted the necessary computations, the discrepancy would not be significantly large to warrant alteration of the initial hypotheses.

Import requirements and the capacity to import.--As has been indicated above, consideration of import substitution in certain lines of domestic production reduces the absolute import requirements for raw materials and intermediate products, which pose another of the more serious obstacles to the attainment of the growth rates postulated for the gross product.

If no further import substitution in these lines of domestic production occurs within the next 15 years, the total deficit in the capacity to import vis-a-vis the import requirement would amount to 259 million pesos in 1965, and more than 1 billion pesos in 1975. This means that, to sustain a growth rate in per capita gross product of 1.5 percent for 1965 and 2 percent up to 1975, the economy must effect a 15 percent reduction in import needs by 1965 in relation to 1956 import proportions, and about 35.4 percent by 1975. The total reduction in import requirements when only limited import substitution is considered represents almost 7 percent for both 1965 and 1975 projections (Tables III-10 and III-11).

Table III-10.--Import Requirements and the Capacity to Import
(With Import Substitution)
(In Thousand Pesos at 1956 Prices)

Item	1956	1965	1975
Import Requirements:			
Merchandise (FOB)	1,011,902	1,397,872	2,319,445
For Final Use	620,821	785,459	1,179,310
For Intermediate Use	391,081	612,413	1,140,135
Services	156,106	197,835	330,156
Foreign Travel	26,780	40,272	69,200
Philippine Gov't. Expend.	11,100	14,159	19,570
Insurance and Freight	118,226	143,404	241,386
Total Requirements	1,168,008	1,595,707	2,649,601
Capacity to Import	1,323,000	1,453,000	1,837,000
Surplus (deficit)	154,992	(142,707)	(812,601)

Table III-11.--Distribution of Gross Fixed Investments by Major Sectors, 1965 and 1975
(Million Pesos at 1956 Prices)

Item	Current 1956	Percent	Hypothetical Projections			
			1965	Percent	1975	Percent
Agriculture	51	7.0	166	14.7	355	14.8
Industry	196	25.0	433	38.4	858	35.8
Basic Facilities Trade and Services	166	21.0	300	26.6	660	27.5
Construction	364	47.0	229	20.3	527	21.9
Total Fixed Investments	777	100.0	1,128	100.0	2,400	100.0

Thus, the excess of import requirements over the capacity to import for 1965 is reduced from P259 million (when no import substitution is considered) to P143 million when limited import substitution is considered; and for 1975, from P1,010 million to P813 million. The requirements for imported raw materials and intermediate products (valued at F.O.B.) for 1965 will be reduced from about P715 million, in the case of no import substitution, to P612 million; and, for 1975, from P1,316 million to P1,140.

It is interesting to note that, even when import substitution is considered, the proportion of imports of raw materials and intermediate goods to total merchandise imports would increase from 38.6 percent in 1956 to 43.8 percent in 1965 and 49.2 percent in 1975. In the case of no import substitution, the increase in the proportion is even higher about 47.7 percent for 1965 and 52.7 percent for 1975(Tables III-9 and III-10).

On the basis of these considerations, it seems likely that actual import requirements for 1965 and 1975 could well be within the limits of the projected capacity to import provided that sufficient domestic effort is exerted towards continuance of the import substitution process that has already been achieved since 1956. This means that domestic production of raw materials and intermediate products must increase at a rate of more than 6 percent per annum from 1956 to 1975.

Investment requirements and sources of investment.--The intensification of the import substitution process (by reducing absolute import requirements) necessarily increases domestic output, and, consequently, intensifies the need for capital investments. The absolute amount of capital requirements is, of course, determined by the varying intensity of growth implied in the various sectors, and the varying capital-output ratios prevailing within them.

While the lack of data on incremental investments requirements per unit increase in output of the major sectors of the economy greatly limit analysis of the investment needs of each of the sectors to sustain the postulated growth, it has been possible at least to indicate the general orders of magnitude by utilizing the sectoral capital-output ratios derived in the preceding section (Part II).

As indicated in that section, the capital-output ratios derived for the major sectors would generally tend to be high since, in the computations, the outputs related to the increases in fixed capital were valued at factor cost. If these ratios were used to determine investment needs for the interindustry projections (with limited import substitution for both 1965 and 1975), the results would imply an aggregate capital-output ratio (for fixed investment) of 2.04 for 1965 and 1.81 for 1975.

For various reasons, it is expected that the actual case that may obtain within the next 15 years would be the exact reversal of these findings. 41/ While it is generally anticipated that the aggregate capital-output in the future will tend to be higher than the average that obtained in the last decade, the ratio that may obtain in the shorter period from the present to 1965 may tend to be lower than the longer period from 1965 to 1975. It is also probable that the average incremental capital-output ratio for the period up to 1965 may even be lower than that actually obtained for the period 1956 to 1959.

41/ As expected, the aggregate capital-output ratio for 1965 would be higher than that for 1975 if the same sectoral ratios are used invariably for both years, since the growth rate postulated for 1965 is lower than that for 1975.

In the first place, it would be recalled that the main reasons for postulating a higher capital-output ratio in the future are due to the anticipated shifts from light to relatively heavy industries, due in no small part to the change in the investment climate that has accompanied the recent "decontrol" program of the Philippine Government. 42/ For the same reason, greater dispersal of industries to locations near the source of raw material is anticipated, thereby requiring greater investments in basic facilities and "social overheads."

While these indications definitely point to an increase in the aggregate incremental capital-output ration, it is somewhat more difficult to arrive at the definite magnitudes that would be involved - excepting an actual survey of business investment programs. For instance, it is doubtful whether the use of sectoral capital-output ratios derived in the preceding section is valid even on purely theoretical grounds, since these ratios were probably influenced by the absolute reductions in the volume of agricultural output in 1958 and 1959 as well as recessionary tendencies in industrial activity caused by monetary difficulties which appeared in the latter year. In any case, the aggregate and sectoral ratios derived from 1956 to 1959 may be too high for projections up to 1965, so that the initial projections (in the preceding section) adopted an aggregate capital-output ratio of 1.88 for 1965 (Hypothesis A) and 2.06 for 1975.

In accordance with these initial hypotheses, the sectoral capital-output ratios in the preceding section were modified for the 1965 projections but, in the absence of anything else, were utilized for the 1975 projections Table III-11 gives the total fixed capital requirements and the distribution of fixed investments by major sectors computed on the basis of the hypothetical distribution of the gross product given in the preceding pages.

Again, while these calculations yield at the most no more than rough indications of the orders of magnitudes, the general conclusions that can be derived indicate that in order to sustain the various growth rates implied in the sectoral projections to 1965, the capital-output ratios for major industrial groups would have to decline by almost 19 percent from 1956 to 1959 average (although still substantially higher than the average for the whole 9-year period from 1950 to 1959). The capital-output ratio adopted for agriculture in these sectoral projections is about 0.82-somewhat higher than the similar ratio of 0.6 for Greece, but lower than the 1 to 1 ratio for Mexico in 1957 to 1958. In terms of the aggregate, the capital requirements to sustain growth in the major sectors imply an aggregate capital-output ratio (for fixed investments) for 1965 of 1.73, so that the total fixed investment requirements would amount to P1,128 million for 1965; and for 1975, an aggregate ratio of 1.90, with total fixed investment requirements amounting to P2,400 million for that year.

The initial hypotheses established regarding requirements for fixed investments are believed not materially altered by the sectoral projections for 1965 and 1975. The differences can be reasonably accounted for by the limitations on import substitution in the sectoral projections.

42/ One of the main features of the import control program in the last decade was the maintenance of an artificial exchange rate, which in effect, tended to make imports relatively cheaper than domestic products. Hence, the climate favored the type of activity that demanded relatively less capital as such and more imported raw materials. (See Section II, p. 30). This also favored the concentration of industries in urban areas where imported raw materials could be secured most economically. (See: Sixto K. Roxas, "An Economic Point of View," Manila Chronicle, Thursday, March 23, 1961.)

2. Evaluation of Shifts in the Economic Structure

Structural changes under conditions of import substitution.--The structural changes in the composition of production will be slight when no import substitution is considered. The proportion of manufacturing output to total gross product will increase from 10.8 percent in 1956 to 12.3 percent in 1965 and 12.7 percent in 1975. Agriculture will still account for a substantial portion of gross product, although its contribution will decline from 36 percent in 1956 to 34.5 percent in 1965, and to 33.3 percent in 1975 (Table III-12). This implies that manufacturing output will increase at the rate of 6.3 percent from 1956 to 1965, in contrast to a rate of increase of more than 8 percent from 1956 to 1959, and more than 11 percent for the period from 1950 to 1959.

Table III-12.--Distribution of Gross Product, by Major Sectors, 1956, 1965 and 1975 Without Import Substitution

(Value in Million Pesos)

Sectors	1956		1965**		1975**	
	Gross Product	Percent of Total	Gross Product	Percent of Total	Gross Product	Percent of Total
Agriculture*	3,154	36.0	4,636	34.5	7,550	33.3
Mining	173	2.0	233	1.7	397	1.8
Manufacturing	944	10.8	1,659	12.3	2,886	12.7
Construction	285	3.3	303	2.3	641	2.8
Trade, Trans., Serv.	3,027	34.6	4,927	36.7	8,645	38.1
Gov't. Services	679	7.7	944	7.0	1,304	5.7
Personal Service	494	5.6	742	5.5	1,276	5.6
Total	8,756	100.0	13,444	100.0	22,699	100.0

*Includes sectors 1-9 and 11.

**Rate of Growth 1956-1965, 3.89%; 1956-1975, 4.67%.

The reduction in the growth rate in manufacturing is only partly real. It is due to the limited extent of import substitution undertaken, as well as to the method applied in projecting final demand for manufactured products other than products of the eight agricultural commodities.

However, even when only a limited amount of import substitution is considered, there is an increase in the annual rate of growth of manufacturing output to 7 percent from 1956 to 1975, so that the proportionate share of manufacturing in the gross product increases slightly to 12.6 percent in 1965 and 13.0 percent in 1975.

A hypothetical discussion of possible changes in structure.--Further import substitution will doubtlessly further increase the percentage share of manufacturing to total gross product. For purposes of illustration, a hypothetical structure of the economy may be formulated by assuming that the difference between the initial projections of the gross product and those derived from the interindustry projections will be subsumed by increases in manufacturing output due to import substitution. This means an increment in manufacturing output amounting to P607 million for 1965 and P1,713 million for 1975, so that the annual rate of growth of this sector increases to about 11 percent from 1956 to 1965 and 9.0 percent from 1956 to 1975.

Under this assumption, the proportion of manufacturing output to total gross product will increase from 10.8 percent in 1956 to 17.3 percent in 1965 and 19.7 percent by 1975. In contrast, the proportion of agricultural output will decrease from 36.0 percent in 1956 to 32.5 percent in 1965 and 30.6 percent in 1975 (Table III-13).

Table III-13.--Hypothetical Case: Distribution of Gross Product if All of the Difference Between Aggregate and Sectoral Projections Were Accruing to Manufacturing

(Millions of Pesos at 1956 Prices)

Sectors	1956		1965		1975	
	Gross Product	Percent of Total	Gross Product	Percent of Total	Gross Product	Percent of Total
Agriculture	3,154	36.0	4,636	32.5	7,550	30.6
Mining	173	2.0	233	1.6	397	1.6
Manufacturing	944	10.8	2,461	17.3	4,862	19.7
Construction	285	3.2	303	2.1	641	2.6
Trade, Trans. and Service	3,027	34.6	4,927	34.6	8,645	35.0
Gov't. Services	679	7.8	944	6.7	1,304	5.3
Personal Services	494	5.6	742	5.2	1,276	5.2
Total Gross Product	8,756	100.0	14,246	100.0	24,675	100.0

From all of the above considerations, it is thus likely that the continuation of import substitution particularly in the manufacturing sector will have the dual effect of (1) further reducing the import requirements for raw materials and intermediate products, and (2) increasing the proportion of domestic output deriving from the manufacturing sector anywhere between 14.5 to 17 percent for 1965, and 15 to 20 percent by 1975.

D. Sector Balances for the Selected Agricultural Commodities, in Value Terms

Sector balances, particularly for the selected agricultural commodities, have been constructed on the basis of the interindustry analyses (Appendix Tables B-1 to B-11). Expressed in value terms at constant 1956 prices, the projections with respect to import demand are as follows (Tables III-14 and III-15).

Table III-14.--Index of Imports, of Selected Agricultural Commodities (1956=100), 1956 and 1975

(In Value Terms, at Purchaser's Price)

Commodity	1965	1975
Rice	-	-
Corn	-	-
Tobacco	-	-
Cotton	62.65 b/	78.78 b/
Lint	378.60	650.70
Textile	21.95	8.55
Knitted	149.80	225.30
Wearing Apparel	143.30	213.40
Meat and Meat Products	84.00 b/	70.20 b/
Livestock	176.90	223.65
Slaughtered Meat	117.35	154.80
Prepared and Preserved Meat	57.21	-
Dairy Products	78.20	125.20
Wheat and Wheat Flour		
Wheat Grain	240.65 a/	378.70 a/
Wheat Flour	-	-
Tallow	113.80	153.25
Total	71.30	98.95

a/ No imports in 1956, the base year. Index is based on 1960 imports amounting to about P20,000,000 at purchaser's price (i.e., FOB of P16,000,000 plus domestic trade and transport margins of approximately P4 million.

b/ Average index.

Table III-15. -- Summary Table: Interindustry Projections of Supply and Demand For Selected Agricultural Commodities Base Year 1956; and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Sectors	Demand			Supply			
	Final Demand	Intermediate Demand	Total	Domestic Production	Stock Depletion	Imports	Total
1956							
1. Rice							
a. Rough	179,041	521,031	700,072	700,072	-	-	700,072
b. Milled	643,658	2,919	646,577	639,879	-	6,698	646,577
2. Corn							
a. Shelled	20,640	108,127	128,767	128,763	-	4	128,767
b. Milled	91,644	5,930	97,574	97,574	-	-	97,574
3. Tobacco							
a. Native Leaf	12,887	5,790	18,677	18,677	-	-	18,677
b. Virginia Leaf	6,283	32,349	38,632	38,632	-	-	38,632
4. Cotton							
a. Lint	2,423	6,547	8,970	255	-	8,715	8,970
b. Cotton Textile	101,630	43,004	144,634	49,475	-	95,159	144,634
c. Knitting Mill Prod.	40,556	5,394	45,950	44,954	-	996	45,950
d. Wearing Apparel	100,403	23,031	123,434	110,596	-	12,838	123,434
5. Meat and Meat Products							
a. Livestock and Poultry	589,263	203,373	792,636	790,369	-	2,267	792,636
b. Slaughter Houses	644,004	3,293	647,297[a]	639,272[a]	-	8,025[a]	647,297
c. Prep. and Pres. Meat	19,559	-	19,559	1,711	-	17,848	19,559
6. Dairy							
a. Raw Milk	6,975	317	7,292	7,292	-	-	7,292
b. Dairy Products	94,203	741	94,944	11,177	-	83,767	94,944
7. Wheat and Wheat Flour							
a. Wheat Grain	-	-	-	-	-	-	-
b. Wheat Flour	28,717	32,431	61,148	-	-	61,148	61,148
8. Tallow	-	2,221	2,221	-	-	2,221	2,221
TOTAL	2,581,886	996,498	3,578,384	3,278,698	-	299,686	3,578,384

[a] Excludes byproducts such as hides and tallow.

[b] Canned filled milk estimated at P65,018 in 1965 and P104,111 in 1975.

[c] Adjusted: The interindustry table gives the values: P1,218,000 for stock addition and P61,213,000 for intermediate demand.

[d] Adjusted: The interindustry table, P4,709,000 for inventory/stock additions: P92,582,000 for intermediate demand.

[e] Adjusted for statistical discrepancy of - P7,512,000.

[f] Adjusted for statistical discrepancy of +P20,053,000.

[g] Adjusted for statistical discrepancy of +P24,000,000.

[h] Adjusted for statistical discrepancy of - P5,097,000.

[i] Adjusted for statistical discrepancy of - P6,669,000.

N.B. All values are in terms of purchasers' prices. Therefore, the import values shown here are generally higher than their f.o.b. value.

Table III - 15. -- Summary Table: Interindustry Projections of Supply and Demand (continued)
For Selected Agricultural Commodities Base Year 1956;
and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Sectors	Demand			Supply			
	Final Demand	Intermediate Demand	Total	Domestic Production	Stock Depletion	Imports	Total
1965 (A)							
1. Rice							
a. Rough	133,601	844,952	978,553	978,553	-	-	978,553
b. Milled	993,372	11,248	1,004,620	1,004,620	-	-	1,004,620
2. Corn							
a. Shelled	14,400	129,879	144,279	144,279	-	-	144,279
b. Milled	93,853	9,111	102,964	102,964	-	-	102,964
3. Tobacco							
a. Native Leaf	14,143	10,847	24,990	24,990	-	-	24,990
b. Virginia Leaf	26,786[c]	35,653[c]	62,439	62,439	-	-	62,439
4. Cotton							
a. Lint	498	32,883	33,381	386	-	32,995	33,381
b. Cotton Textile	154,467	127,444	281,911	261,041[e]	-	20,870	281,911
c. Knitting Mill Prod.	61,376	8,111	69,488	67,996	-	1,492	69,488
d. Wearing Apparel	144,820	32,863	177,683	157,287	-	18,396[h]	177,683
5. Meat and Meat Products							
a. Livestock and Poultry	1,045,849	263,565	1,309,414	1,305,403	-	4,011	1,309,414
b. Slaughter Houses	825,393	14,944	840,337[a]	830,921	-	9,416[a]	840,337
c. Prep. and Pres. Meat	57,982	-	57,982	47,771	-	10,211	57,982
6. Dairy							
a. Raw Milk	9,549	1,912	11,461	11,461	-	-	11,461
b. Dairy Products	128,851	4,051	132,902	67,407[b]	-	65,495	132,902
7. Wheat and Wheat Flour							
a. Wheat Grain	-	48,132	48,132	-	-	48,132	48,132
b. Wheat Flour	5,558	54,432	59,990	59,990	-	-	59,990
8. Tallow	-	2,639	2,639	-	-	2,639	2,639
TOTAL	3,770,499	1,632,666	5,343,165	5,129,508	-	213,657	5,343,165

[a] Excludes byproducts such as hides and tallow.

[b] Canned filled milk estimated at P65,018 in 1965 and P104,111 in 1975.

[c] Adjusted: The interindustry table gives the values: P1,218,000 for stock addition and P61,213,000 for intermediate demand.

[d] Adjusted: The interindustry table, P4,709,000 for inventory/stock additions: P92,582,000 for intermediate demand.

[e] Adjusted for statistical discrepancy of - P7,512,000.

[f] Adjusted for statistical discrepancy of + P20,053,000.

[g] Adjusted for statistical discrepancy of +P24,000,000.

[h] Adjusted for statistical discrepancy of - P5,097,000.

[i] Adjusted for statistical discrepancy of - P6,669,000.

N. B. All values are in terms of purchasers' prices. Therefore, the import values shown here are generally higher than their f. o. b. value.

Table III -15. -- Summary Table: Interindustry Projection of Supply and Demand For Selected Agricultural Commodities Base Year 1956; and Projections to 1965 (A) and 1975 (continued)

(Value in Thousand Pesos at 1956 Prices)

Sectors	Demand			Supply			
	Final Demand	Intermediate Demand	Total	Domestic Production	Stock Depletion	Imports	Total
1975							
1. Rice							
a. Rough	120,328	1,209,776	1,330,104	1,330,104	-	-	1,330,104
b. Milled	1,385,081	19,409	1,404,490	1,404,490	-	-	1,404,490
2. Corn							
a. Shelled	25,072	215,886	240,958	240,958	-	-	240,958
b. Milled	151,729	14,288	166,017	166,017	-	-	166,017
3. Tobacco							
a. Native Leaf	20,052	16,372	36,424	36,424	-	-	36,424
b. Virginia Leaf	43,641[d]	53,070[d]	96,711	96,711	-	-	96,711
4. Cotton							
a. Lint	1,697	53,868	55,565	601	-	54,964	55,565
b. Cotton Textile	236,546	201,846	438,392	430,253[f]	-	8,139	438,392
c. Knitting Mill Prod.	94,055	12,280	106,335	104,091[g]	-	2,244	106,335
d. Wearing Apparel	213,348	49,202	262,550	235,157[i]	-	27,393	262,550
5. Meat and Meat Products							
a. Livestock and Poultry	1,910,986	391,961	2,302,947	2,295,610	-	7,337	2,302,947
b. Slaughter Houses	1,214,552	33,572	1,248,124	1,235,699	-	12,425[a]	1,248,124
c. Prep. and Pres. Meat	107,927	-	107,927	107,927	-	-	107,927
6. Dairy							
a. Raw Milk	15,282	3,061	18,343	18,343	-	-	18,343
b. Dairy Products	206,323	6,510	212,833	107,936[b]	-	104,897	212,833
7. Wheat and Wheat Flour							
a. Wheat Grain	-	75,738	75,738	-	-	75,738	75,738
b. Wheat Flour	17,194	83,091	100,285	100,285	-	-	100,285
8. Tallow	-	3,404	3,404	-	-	3,404	3,404
TOTAL	5,763,813	2,443,334	8,207,147	7,910,606	-	296,541	8,207,147

[a] Excludes byproducts such as hides and tallow.

[b] Canned filled milk estimated at P65,018 in 1965 and P104,111 in 1975.

[c] Adjusted: The interindustry table gives the values: P1,218,000 for stock addition and P61,213,000 for intermediate demand.

[d] Adjusted: The interindustry table, P4,709,000 for inventroy/stock additions: P92,582,000 for intermediate demand.

[e] Adjusted for statistical discrepancy of - P7,512,000.

[f] Adjusted for statistical discrepancy of + P20,053,000.

[g] Adjusted for statistical discrepancy of + P24,000,000.

[h] Adjusted for statistical discrepancy of - P5,097,000.

[i] Adjusted for statistical discrepancy of - P6,669,000.

N. B. All values are in terms of purchasers' prices. Therefore, the import values shown here are generally higher than their f. o. b. value.

1. There are no imports of rice, corn, and tobacco projected for 1965 and 1975, indicating that domestic production during these future years will meet all the necessary demand (final and intermediate) for these commodities.

2. Projected imports for meat and meat products indicate rapid increases of imported livestock (on-the-hoof) animals for food by 1965 and 1975 (76.9 percent and 123.6 percent over the 1956 level, respectively); and more moderate increases in fresh/frozen meat imports at about 17.35 percent and 54.8 percent over the 1956 level, by 1965 and 1975 respectively. However, there will be a substantial decline in the imports of canned (prepared and preserved) meats by 1965 so that imports during that year will be about 57 percent of the 1956 level; and by 1975, the projections indicate no importations of this meat product.

These projections assume the establishment of meat processing plants, which will have to import raw materials to sustain projected levels of operation.

3. In the case of dairy projections, import projections to 1965 indicate a decline by about 22 percent in the value of imports compared to 1956. This drop is attributable to the projected rapid increase in the production of the filled milk industry, which will meet roughly one-half of the demand for dairy products by 1965 and 1975. (The filled milk industry has been included under the dairy products sector, by definition.) However, imports of dairy products by 1975 will be about 25.2 percent over the 1956 level.

4. Projections of wheat imports by 1965 and 1975 indicate no imports of wheat flour by 1965 and 1975; but the value (in constant 1956 prices) of wheat grain imports by 1965 will be about 2.4 times that of 1960; and by 1975, will be about 3.8 times the imports of wheat grain in 1960. These projections imply that there will be enough flour milling capacity to transform grain into flour.

5. There will be no significant domestic production of tallow by 1965 and 1975; and imports will continue to rise so that 1965 imports of tallow will be about 18.8 percent over that of 1956; and in 1975 imports of this product will be about 53.2 percent over that of the base year.

Some qualifications.--The relative magnitudes mentioned in the preceding discussions give indication of the levels of future import demand for the selected agricultural commodities under particular study. However, as previously mentioned, use of the interindustry analysis specifically for assessing future import demand is limited by the level of aggregation forced by existing data and by assumptions regarding the stability of certain proportions during the base year (note the ratio of stock addition to total final demand during the base year). Thirdly, the calculations that have been carried out have stopped after two successive approximations. Since the time and fund resources on hand have virtually been exhausted, import substitutions have been extended to cover only selected, albeit significant, sectors of the economy. Yet another limitation exists. Projections of the final demand of households for commodities other than the selected agricultural commodities have been derived by distributing the balance of household expenditures on the basis of ratios obtaining during the base year.

IV. DEMAND ANALYSES AND PROJECTIONS FOR SELECTED AGRICULTURAL COMMODITIES

The demand projections consist in estimating both final and intermediate demand for selected agricultural commodities by 1965 and 1975. The estimation of final consumption of the selected agricultural commodities, particularly of households, is undertaken on the bases of given levels of income, population urbanization, and other factors during the projection years. Before the projections of household final demand can be made, however, a problem of a simpler type has to be considered first. If household incomes rise by 5 percent by 1965, other factors remaining constant, will the consumption of say, corn, increase by 3 percent or decline by 2 percent? If there were more people in urban areas by 1965, other factors remaining constant, would this mean that consumption of corn will decline? Thus, prior to projections, the relationships between consumption and the economic factors determining consumption are first established. On the basis of these relationships (which are assumed to be stable) and the future changes in the various factors determining demand, the projections are made. Projections of other final demands, such as investments and exports, are projected on the basis of specific considerations for each sector. For instance, export demand for a commodity would be a function of the world supply and demand situation for that commodity. The use of a commodity as an investment good depends on the capital requirements of the relevant sector.

The intermediate demand for each of the selected agricultural commodities (as well as for other commodities) has been estimated by an interindustry analysis involving various industrial sectors of the Philippine economy. The estimating procedures are summarized as follows: (1) on the basis of the estimated total final demand (of households, government, the export market, and the like) for commodities coming from any one sector, the production requirements for that sector are estimated by applying the inverse elements of a matrix of input coefficients; 43/ (2) the inputs for each sector will expand in proportion to the estimated production requirements (inputs from sector i going into sector j--or the demand of sector j for products from sector i--are determined); and (3) finally, since final demand for each commodity is distinguished into that for domestically produced goods and that for imported goods, import substitution possibilities in terms of final demand can be studied on an ad hoc basis. If significant import substitution can be affected, the final demand for domestically produced goods will increase; and the requirements on domestic production as well as the intermediate demand for domestically produced imports are determined given the direct and indirect requirementst 44/ for domestic raw materials and intermediate products per unit of final demand for domestically produced goods.

43/ In matrix notation:

$X = (I-A)^{-I}Y$, where X is a vector of sector outputs, Y is a vector of sector final demands and A is a (square) matrix of input coefficients, and I is an identity matrix.

44/ The inverse elements of the matrix of input coefficients for domestically produced intermediate goods.

A. Analysis and Projections of Household Final Demand

1. Demand Analysis

Having discussed projections of final demand other than households in a previous section (page 61) we shall deal here only with that pertaining to households.

Demand elasticities were derived from a household budget survey. The significant determinants of consumption were income, household size, urbanization, and (in the case of corn) regions. Demand functions of the double-logarithmic form were used, the parameters of which were obtained by the least-squares method.

The household budget survey.--Since there had been no existing data which would enable demand analyses and projections to be carried out for the specific commodities under consideration, a household budget survey was made an integral part of the project study. This survey was independent of previous surveys conducted by government agencies (such as the Philippine Statistical Survey of Households).

1. Purpose of the survey.-- The survey was primarily intended to gather data on the basis of which significant relationships between consumption of selected agricultural commodities and various economic-demographic characteristics could be derived. Based on preliminary study, hypotheses were advanced regarding what various economic-demographic variables determined consumption. Thus, the household budget survey essentially was an "analytic" survey, as distinguished from what might be called a "picturesque" survey. 45/ The survey was concerned mainly with the determination of causal relationships rather than the obtaining of reliable estimates of the economic-demographic characteristics of the population.

2. The sample design.--The survey convered all areas of the Philippines. The five sampling schemes developed by the Philippine Statistical Survey of Households were used as the bases in forming the sample design for the Household Budget Survey. The adopted sampling scheme included 1,220 households in 30 precincts in the Greater Manila area, 32 urban precincts in 22 chartered cities and/or provincial capitals, 60 precincts within poblaciones of municipalities, and 60 barrios within the 30 sample municipalities. For each of the primary sampling units or precincts, an equal number of households (10) was obtained. Supplementary interviews were conducted to gather data for the rural portions of chartered cities and provincial capitals, and for high-income households in the four sectors. A total, therefore, of 1,472 households were covered in the household budget survey.

3. Selection of households.--Since the listings of the Philippine Statistical Survey of Households were not available, a completely new listing of households was undertaken for the sampling sites within the Metropolitan Manila areas, chartered cities and provincial capitals, and poblaciones; and sample households were drawn from the listings. In the case of the barrios, drawing up new household listings was beyond the resources of the study. Sample households were selected by taking every nth household given a random start within the barrio.

4. Duration of the survey.--The survey started on March 15, 1960, and ended on

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45/ See S.J. Prais and H.S. Houthakker, The Analysis of Family Budgets, Cambridge, The University Press, 1955, p. 26.

December 15, 1960. Every month, some 6 to 7 primary sample units or sites were covered in five urban-rural subdivisions, namely: (1) Metropolitan Manila, (2) chartered cities and provincial capitals, (3) poblaciones, (4) barrios, and (5) rural precincts of cities and capitals.

5. Evaluation of the survey.--The household budget survey (1960) indicated average household incomes close to those obtained by the PSSH (1957); and in general, appeared to yield broad estimates regarding consumption and population characteristics that approximated estimates made by government and other agencies. With respect to income levels, a comparison of estimates from the survey and from the PSSH showed the following:

Urban-Rural Sector	Average Household Income AGRECO Survey a/ (1960)	 PSSH Survey b/ (1957)
Metropolitan Manila	4,037	4,255
Urban, Outside Manila	2,420	2,535 c/
Rural	1,093	989
Philippines	1,660	1,471

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a/ 1,472 households.

b/ 6,500 households.

c/ Adjusted to include only households in urban precincts of chartered cities and provincial capitals (about 60 percent of households).

In addition, there was some variation regarding average household size between the survey and the PSSH survey:

Urban-Rural Sector	Average Household Size AGRECO Survey (1960)	 PSSH Survey (1957)
Metropolitan Manila	6.4	5.9
Urban, Outside Manila	6.1	
Rural	5.9	5.6
Philippines	6.0	5.7

The Philippine Department of Agriculture and Natural Resources estimates that the rice-eating population of the Philippines is about 76.8 percent while estimates based on the household budget survey indicate that 77.3 percent of the households are rice-eating. With respect to corn, about 30 percent of the households reported corn consumption as against a national estimate of the corn-eating population as 20.8 percent of total population. However, some households included in the survey do not consume this product regularly (such as Manila households, 9.5 percent of which reported corn consumption).

Demand analysis.--The specific procedures of the household demand analysis are as follows:

1. Graphical analysis.--The survey data gathered were plotted on double-logarithmic scale charts, and graphical inspection of the data made. The graphical analysis indicated the possibility of simplifying hypotheses initially advanced, as follows:

Determinants of Demand in Initial Hypotheses	Results of Graphical Analysis
Regions	No perceptible difference in consumption, except for corn.
Urban-Rural Areas	Some perceptible differences in consumption between sectors within regions. However, consumption patterns in chartered cities, provincial capitals, and poblaciones were found almost similar (having the same "drift" and level); and so were consumption patterns for barrios and rural precincts of chartered cities and provincial capitals.
Occupation of head of household	No perceptible difference in consumption between occupations, within urban-rural sectors and regions.
Household Size	Some perceptible difference in consumption between households of varying sizes.
Income Levels	Perceptible differences in consumption between households of different income levels.

On the basis of the graphical analysis, the following were recognized and isolated as the most significant determinants of demand: (a) income, (b) urbanization, in terms of three urban-rural sectors mentioned below, (c) household size, and (d) regions (in the case of corn).

Since urbanization or regional characteristics are not measurable in quantitative terms (although so-called "dummy" variables may be applied to denote urban or regional differences), the demand analysis has been carried out for households in each urban-rural classification.

2. The form of the relationship.--The functional form adopted for the purposes of the demand analysis was the double-logarithmic equation. The form adopted is equivalent to the hypothesis that the demand elasticity is constant for each subclassification. However, certain difficulties arise such as the treatment of households that have no consumption, and the uncertain validity of the double logarithmic form over wide ranges of income (since income elasticities may change in the higher income ranges).

There were some households reporting nonconsumption of the eight agricultural commodities. Zero consumption by any particular household might be due either to: (1) the household never buying the commodity, such as a rice-eating household never buying corn, or (2) the household forgetting to report consumption of the commodity, in which case there is an error of observation. For purposes of the present study, all zero consumption has been classified as falling under the first possibility. Nonconsuming households, therefore, were treated separately, and were assumed to remain a constant proportion to total population.

3. Numerical computation.--A multiple regression approach on income and household size has been adopted, with the following form:

$$\log C = a + b \log Y + c \log H$$

where C is quantity consumed by the households

Y is household income

H is household size.

The basic unit of consumption being the households, the elasticities have been obtained on the basis of individual household data. The demand elasticities were estimated for three urban-rural sectors mentioned below. A multiple regression approach was chosen in order to isolate the effect of income from household size, since income is usually also correlated with household size as well as with consumption. The demand elasticities derived from the survey data were for three subgroups of households: (1) Metropolitan Manila households, (2) urban households outside of Metropolitan Manila, which include households in urbanized portions (urban precincts) of chartered cities and provincial capitals and in poblaciones, and (3) households in barrios and rural portions (or rural precincts) of chartered cities and provincial capitals (Table IV-I).

Table IV-1.--Household Demand Elasticities for Twenty-Two Products Made From Eight Agricultural Commodities

Products		Urban-Rural Sector	Constant	Income Elasticity	Household Size Effect
Rice		Manila	.529	.001	.662
		Urban	.383	.120	.363
		Rural	1.364	-.149	.312
Corn	Corn Cereal	Manila	2.407	-.642	-.036
		Urban	.703	-.144	.735
		Rural	.896	-.101	.513
	Corn Starch	Manila	.114	-.051	.137
		Urban	-.418	.103	.245
		Rural	-.245	.013	.551
Wheat Flour					
	Bakery Products	Manila	-1.587	.367	.627
		Urban	-1.542	.396	.254
		Rural	-2.561	.605	.518
	Noodles	Manila	-2.358	.408	.519
		Urban	-2.262	.446	.237
		Rural	-2.158	.456	-.066

(continued)

Table IV-1. (continued) --Household Demand Elasticities for Twenty-Two Products Made From Eight Agricultural Commodities

Products	Urban-Rural Sector	Constant	Income Elasticity	Household Size Effect
Root Crops	Manila	-.743	.211	.405
	Urban	-.581	.233	.232
	Rural	.955	-.069	-.224
Dairy Products				
Fresh Milk and Milk Prod.	Manila	-2.222	.649	.344
	Urban	-2.739	.899	-.251
	Rural	.053	-.022	.378
Canned Whole Milk	Manila	-4.990	1.588	-.456
	Urban	3.648	1.277	-.633
	Rural	-1.450	.406	.274
Canned Filled Milk	Manila	-1.317	.464	.155
	Urban	-.902	.317	.193
	Rural	-1.124	.303	.463
Margarine	Manila	-1.828	.265	.145
	Urban	-6.075	1.530	-.424
	Rural	-.501	.077	-.574
Meat and Meat Products				
Pork	Manila	-1.411	.380	.226
	Urban	-1.403	.413	.174
	Rural	-.711	.212	.165
Fresh Beef	Manila	-2.003	.555	.145
	Urban	-1.343	.388	.146
	Rural	.465	.124	.135
Processed Beef	Manila	-1.244	.287	.135
	Urban	-2.127	.572	.098
	Rural	-2.241	.303	1.367
Poultry	Manila	-.373	.176	-.021
	Urban	1.293	.393	.149
	Rural	-.476	.258	-.222

Table IV-1. (continued)--Household Demand Elasticities for Twenty-Two Products Made From Eight Agricultural Commodities

Products	Urban-Rural Sector	Constant	Income Elasticity	Household Size Effect
Fish and Fish Products	Manila	- .462	.153	.427
	Urban	- .585	.272	.158
	Rural	- .852	.329	.318
Tobacco				
Virginia Tobacco	Manila	-1.825	.250	.232
	Urban	-1.611	.182	.242
	Rural	-2.038	.413	.214
Native Tobacco	Manila	-1.927	.283	.022
	Urban	-4.383	1.115	- .179
	Rural	-1.821	.302	- .076
Tallow and Other Oils				
Toilet Soap	Manila	-2.128	.121	.654
	Urban	2.947	-1.761	2.376
	Rural	-1.660	.054	.147
Laundry Soap	Manila	-1.387	.164	.384
	Urban	-1.798	.295	.281
	Rural	-1.313	.080	.460
Cotton and Cotton Products				
Threads and Yarns	Manila	-1.288	.011	.713
	Urban	-1.872	.283	.276
	Rural	-1.980	.181	.648
Ready Made Clothes	Manila	- .952	.557	.023
	Urban	1.014	.499	.422
	Rural	.436	.622	- .051
Other Fibers				
Synthetics and Other Fibers	Manila	-1.849	.624	- .051
	Urban	- .985	.206	.407
	Rural	-1.667	.319	.737

The application of the double-logarithmic form yielded demand elasticities which were constant for the entire income range within each urban-rural subgroup. Constant income elasticities would exaggerate the response to demand of households at the high income levels and dampen such response for those at low levels, within subgroups. The sample size, however, precluded a subclassification of income levels within subgroups that would have enabled analysis of income elasticities at different income levels within subgroups (by the use, for instance, of Tornquist functions).

It should be noted that the demand elasticities are given without their standard errors. In the first place, in a regression analysis of nonexperimental data, such as that derived from a relatively small household budget survey, the standard errors carry little weight as significance indicators. Secondly, for demand elasticities derived from household budget survey data, the standard errors calculated by the classical least squares method are generally small. Therefore, to supply the elasticities with standard errors might give false impressions of accuracy. In evaluating the reliability of the results, the main relevant criterion lies in the regularity and consistency that may be established by comparing the estimated elasticities for different consumption items and different urban-rural sectors. 46/

The demand elasticities are with respect to two variables: income and household size. The third variable, urbanization, has been duly considered through the classification of household data according to three urban-rural sectors and the carrying through of a demand analysis for each sector. Aggregate demand elasticities for the country as a whole have not been estimated 47/ (since it was deemed preferable to project demand according to urban-rural sectors and sum up the sector demands to obtain aggregate national demand).

With a few exceptions, the demand elasticities with respect to income are believed consistent. Income elasticities for chief necessities such as rice and corn are inelastic since their consumption is well satisfied even at low income levels. However, the income elasticities for seminecessities (whole milk, clothes, etc.) are generally higher than those for the main necessities. The elasticities with respect to household size indicate the effect of an increase in household size on consumption. In general, household consumption of necessities tends to increase with household size, while that of luxuries decreases. Thus, with respect to rice and corn (with the exception of Metropolitan Manila household consumption of corn), the elasticities with respect to household size are positive; while consumption of whole milk products appears as a semiluxury to households in Metropolitan Manila and other urban areas.

A comparison of the elasticities of other countries with those derived for the Philippines (shown below), while not strictly comparable because of diverse conditions among countries, show some similar variations.

46/ Herman Wold and L. Jureen, Demand Analysis, New York: John Wiley and Sons, Inc., 1953, pp. 260-261.

47/ The income elasticity of aggregate national demand is a sum of the weighted income elasticities of the urban-rural sectors, the weights being the quantities consumed within each sector.

Commodity	Income Elasticity Philippines a/ (Urban)	 Sweden b/	 Great h/ Britain
Whole Milk and Cream	1.28	1.43 c/	0.66
Meat and Meat Products	0.39 d/	0.37 e/	0.64
Fish and Fish Products	0.27	0.31 f/	1.04
Bakery Products	0.40	0.55 g/	-0.06

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a/ For households in urban areas outside Manila; quantity elasticities.
b/ Quantity elasticities.
c/ For farm and forestry workers in Sweden, 1933.
d/ Fresh beef only.
e/ For middle-class families in Sweden, 1923.
f/ For workers and low-paid employees in Sweden, 1925.
g/ Expenditure elasticities of workers and low-paid employees in Sweden, 1933.
h/ Expenditure elasticities, from Houthakker & Stone.

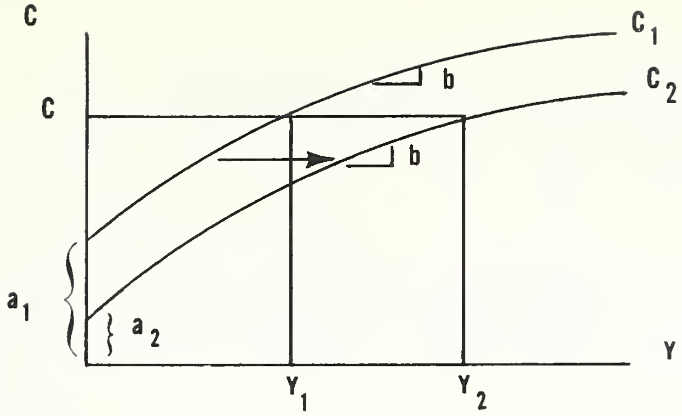
Data for Great Britain refer to expenditure elasticities obtained through regression analysis of expenditure for the specified commodity on household income. However, for Sweden and the Philippines the elasticities were obtained by a regression analysis of quantity consumed on household income. In general, the quantity elasticity is smaller than the expenditure elasticity.

4. Adjustments due to errors of observation on household income.--A comparison of household income between that reported in the survey and that estimated from the national income accounts prepared by the National Economic Council indicate divergence by about 30 percent in some areas. The household income derived from the survey appears smaller in relation to household income estimates based on the NEC accounts. There is evidence that the estimates of gross product from the national accounts prepared by the NEC are overestimated because of high value-added ratios assumed for some industries in the estimation of national income by industrial origin and by some double counting. A complete reconciliation of the NEC national income accounts, however, is beyond the scope of the present study.

On the other hand, the projections of household income were based on developments in the Philippine economy as measured, in the aggregate, by the national income accounts data. Hence, the household income levels estimated from the NEC national income accounts, rather than those estimated from the household budget survey, were assumed to reflect the correct household income.

Underestimation is almost inherent in most, if not all, surveys involving household income. The U.S. Department of Labor (Bureau of Labor Statistics) in its surveys (1941) found that cash incomes reported by households were underestimated by some 10 to 11 percent. In some countries, underreporting of household incomes during surveys has been estimated to be as much as 25 percent.

In view of income underreporting, it is possible to argue that the reported household consumption obtained from the survey is actually for income levels higher than that reported. Hence, adjustments have been made by shifting the demand curve upwards with respect to income, as follows:



The household consumption, C, obtained from the survey has been projected on the basis of household income level Y_2 (from the NEC national income accounts and projections on the basis thereof) rather than on the basis of household income Y_1 (derived from the survey). However, the income elasticities were obtained by using Y_1 from the survey. In the adjustment, the income elasticities (the elasticity with respect to household income and household size) have been maintained. The parameter, a (or the intercept of c), is adjusted mathematically, a procedure deemed acceptable in adjusting for known bias. A comparison between the original, a, and adjusted, a', values (Table IV-2), however, indicates only slight changes in this (constant) parameter for most of the demand functions.

Table IV-2.--Revised Values, a', of a, Due to Shift in Income Curve

(Equation: $C = a + bI + cH$)

Commodities	Metropolitan Manila		Urban Outside Manila		Barrios	
	a	a'	a	a'	a	a'
1. Rice	0.529	0.5427	0.383	0.3802	1.364	1.3434
2. Corn Cereal	2.407	2.5216	0.703	0.7332	0.896	.9091
3. Corn Starch	0.114	-1.3140	-0.418	-0.4121	-0.245	-0.2421
4. Bakery Products	-1.587	-1.6543	-1.542	-1.5919	-2.561	-2.2002
5. Noodles	-2.358	-2.4056	-2.262	-2.2365	-2.158	-2.1155
6. Root Crops	-0.743	-0.7769	-0.581	-0.5867	0.955	0.9948
7. Fresh Milk and Milk Prod.	-2.222	-2.2352	-2.739	-2.5914	0.053	0.0413
8. Canned Whole Milk	-4.990	-5.2203	3.648	-3.5484	-1.450	-1.3198
9. Cannel Filled Milk	-1.317	-1.4149	-0.902	-0.8919	-1.124	-1.0572
10. Margarine	-1.828	-1.8717	-6.075	-5.7890	-0.501	-0.5118
11. Pork	-1.411	-1.4638	-1.403	-1.3736	-0.711	-0.6771
12. Fresh Beef	-2.003	-2.0884	-1.343	-1.2899	0.465	-0.4278
13. Processed Beef	-1.244	-1.2390	-2.127	-1.9829	-2.241	-1.9399
14. Poultry	-0.373	-0.3751	1.293	-1.2196	-0.476	-0.4479
15. Fish and Fish Products	-0.462	-0.5027	-0.585	-0.5916	-0.852	-0.8415
16. Virginia Tobacco	-1.825	-1.8847	-1.611	-1.6179	-2.038	-2.3521
17. Native Tobacco	-1.927	-2.0171	-4.383	-4.5249	-1.821	-1.8245
18. Toilet Soap	-2.128	-2.1500	2.947	2.8624	-1.660	-1.6563
19. Laundry Soap	-1.387	-1.4163	-1.798	-0.9872	-1.313	-1.3233
20. Threads and Yarns	-1.288	-1.2748	-1.872	-1.8966	-1.980	-1.9781
21. Ready Made Clothes, Fabrics, etc.	-0.952	-1.0374	1.014	-1.0399	0.436	-0.9938
22. Synthetics and Other Fibers	-1.849	-1.9188	-0.985	-0.9200	-1.667	-1.5039

Table IV-3.--Interrelated Demand for Selected Agricultural Commodities

$$(\log Y = a_1 + b_1 \log X)$$
$$(\log X = a_2 + b_2 \log Y)$$

Commodities		Regression Coefficients		Intercept Values		Correlation (Y on X)	
Y	X	b_1	b_2	a_1	a_2	Coefficient	Significant Level
1. Rice	Corn	-0.1228	-0.334	1.120	0.732	0.205	Highly Significant*
2. Rice	Wheat	0.0712	0.0721	1.084	0.118	0.074	Highly Significant*
3. Cotton	Synthetics	0.1016	0.1226	1.136	0.001	0.546	Highly Significant*
4. Meat	Fish	0.3164	0.3654	0.448	0.273	0.336	Highly Significant*
5. Canned Whole Milk	Canned Filled Milk	0.0903	0.1080	0.298	0.163	0.098	Significant at the 40% Level
6. Butter	Margerine	0.2590	0.3765	0.929	-0.1060	0.313	Significant at the 20% Level
7. Beef	Pork	0.4473	0.4697	0.0944	0.1707	0.458	Highly Significant*

*Significant at the 1% level.

Interrelated demand for some commodities.--An analysis of the interrelated demand between the following commodities has been undertaken: (1) rice and corn, (2) rice and wheat, (3) meat and fish, (4) pork and beef, (5) canned filled milk and canned whole milk, (6) butter and margarine and (7) cotton and synthetics. The results are summarized in Table IV-3. The analysis has been limited to a study of the regression of two commodities (y on x, and x on y), assuming incomes constant, for households reporting consumption of these pairs of commodities.

The negative relationships between rice and corn indicate that as incomes change and the consumption of rice (or corn) increases, corn (or rice) consumption decreases. They are, therefore, substitutes for each other. In the case of the other pairs of commodities, the relationships are positive, which to some extent was unexpected. Rice and wheat increase (decrease) together, as income changes; and so do meat and fish, beef and pork, cotton and synthetics, butter and margarine. However, this phenomenon may be explainable. Most households are not consuming what they consider sufficient quantities of, say, rice and wheat, beef and pork. Therefore, increases in income result in an increase in the consumption of both commodities. Although it is likely that at some high income level the (positive) relationships will change, there are not sufficient observations upon which to base such a conclusion.

2. The Household Demand Projections

Initial projections on the basis of a hypothetical rate of growth in income.--As a first approximation, household consumption in quantity terms of products made from the eight agricultural commodities was projected on the bases of the following assumptions:

1. Aggregate personal household income levels in 1965 were estimated on the basis of two rates of growth in per capita gross products from 1959: at 1.5 percent per annum (hypothesis A) and at 2.0 percent per annum (hypothesis B); while household income for 1975 was derived from gross income levels estimated on the basis of a 2 percent increase in per capita gross product from 1959. Personal income was obtained as a linear function of gross income, with parameters estimated on the basis of observations from 1950 to 1959, where

$$\text{Personal income} = Y_p = a + b\,(GY),$$

$$Y_p = 0.8440\,(GY) - 9.2550$$

2. Aggregate personal income would be distributed by urban-rural sectors according to ratios obtaining in the 1957 Family Income and Expenditures Survey (conducted by the Philippine Statistical Survey of Households). However, certain adjustments were made due to a difference in concepts regarding urban-rural sectors (explained above). The projected personal income shown in Table IV-4 would be distributed as follows:

Urban-Rural Sectors	Percent Distribution of Aggregate Personal Income		
	PSSH	AGRECO	
	(1957)	1965	1975
Metropolitan Manila	21.6	21.65	21.65
Urban, outside Manila	33.7	26.67	26.67
Rural	44.7	51.68	51.68
	100.0	100.0	100.0

Table IV-4.--Summary: Projections of Personal Income: Aggregate and By Urban-Rural Sectors: 1956, 1960, 1965 and 1975.

(In 1956 Prices; Million Pesos)

Year	PERSONAL INCOME			
	Aggregate	Urban-Rural Sectors		
		Metropolitan Manila	Urban Outside Manila	Rural
1956	8,463	1,832	2,257	4,374
1960	10,103	2,182	2,855	5,066
1965				
A	12,014	2,601	3,204	6,209
B	12,375	2,679	3,300	6,396
1975	20,816	4,507	5,552	10,757

3. Given the estimated number of households in each urban-rural sector, the average annual household incomes were derived as follows:

Urban-Rural Sectors	Average Household Income			
	1960	1965		1975
		A*	B**	
Metropolitan Manila	P6,475	P6,375	P6,572	P7,536
Urban, Outside Manila	2,342	2,628	2,707	3,256
Rural	1,582	1,673	1,720	2,216
Philippines	P2,217	P2,250	P2,318	P2,908

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*Based on a 1.5 percent increase in per capita gross product from 1959.

**Based on a 2 percent increase in per capita gross product from 1959.

4. The projections for the eight agricultural commodities are shown in Table IV-5. Reduced in terms of index numbers (with 1960 = 100) the household demand by 1965 and 1975 for the eight agricultural commodities on the basis of the above assumptions is as follows:

Commodity	Index: 1960 = 100		
	1965		1975
	A	B	
Rice	113.06	112.8	149.7
Corn	113.56	113.28	149.6
Wheat and Wheat Flour	166.54	169.1	261.0
Meat and Meat Products	120.12	123.8	180.4
Dairy Products	117.69	120.0	188.4
Cotton	136.08	138.4	208.7
Tobacco	125.09	135.2	188.6
Tallow	127.50	125.6	158.3

Table IV-6 reflects the number of households interviewed and the percentage thereof indicating consumption of the respective commodities.

Table IV-5.--Projections of the Household Demand For Selected Agricultural Commodities, 1965 and 1975

(Metric Tons)

Commodities	1960	Projections		
		1965		1975
		A	B	
1. Milled Rice	2,346,812	2,653,269	2,648,076	3,531,528
2. Shelled Corn	796,120	904,147	901,872	1,191,155
3. Wheat Flour	135,304	225,331	228,781	353,194
4. Milk and Milk Products	295,100	347,303	354,112	556,070
5. Meat and Meat Products (Including Poultry)	322,676	387,613	399,405	582,292
6. Leaf Tobacco (Native and Virginia)	23,400	29,271	31,642	44,146
7. Tallow	6,240	7,956	7,836	9,881
8. Cotton	31,142	42,378	43,103	64,968
9. Other Commodities				
a. Root Crops	532,428	610,948	610,592	811,286
b. Margarine	4,004	4,670	11,190	82,628
c. Fish and Fish Products	313,508	394,498	397,962	577,356
d. Other Oils (Coconut, including Kerosine, etc.)	1,151,280	1,534,811	1,541,010	1,626,413
e. Synthetic and Other Fibres Fibres		1,055	1,066	1,519

Table IV-6.--Total Number of Households Interviewed and Number of Households Reporting Consumption of Selected Agricultural Commodities, 1960

Commodity Consumed	Number of Households Consuming			Percent of Total Households Interviewed		
	Metropolitan Manila	Urban Outside Manila	Barrios and Rural Precincts	Metropolitan Manila (330)*	Urban Outside Manila (722)*	Barrios and Rural Precincts (420)*
Rice	323	640	298	97.88	86.64	70.95
Corn Cereal	31	233	132	9.39	32.27	31.43
Corn Starch	135	359	182	40.91	49.72	43.57
Bakery Products	298	578	179	90.30	80.05	42.62
Noodles and Other Wheat	209	430	144	63.33	59,56	34.29
Root Crops	284	530	228	86.06	73.41	59.05
Pork	248	416	122	75.15	57.62	29.05
Fresh Beef	230	306	60	69.70	42.38	14.29
Processed and Canned Beef	121	145	27	36.67	20.08	6.43
Poultry	96	238	85	29.09	32.96	20.24
Fish and Fish Products	194	376	199	58.79	52.08	47.38
Fresh Milk and Milk Products	128	185	36	38.79	25.62	8.57
Canned Whole Milk	167	309	66	50.61	42.80	15.72
Canned Filled Milk	152	237	59	46.06	32.83	14.05
Margarine, etc.	155	148	14	46.97	20.50	3.33
Virginia Tobacco	218	440	163	66.06	60.94	38.81
Native Tobacco	78	264	115	23.64	36.57	27.38
Laundry Soap	283	635	312	85.76	87.95	74.29
Toilet Soap	296	580	191	89.70	80.33	45.48
Kerosene and Detergents	183	554	320	55.45	76.73	76.79
Threads and Yarns	242	637	314	73.33	88.23	74.76
Readymade Clothes, Fabrics and Household Articles	257	641	314	77.88	88.78	74.76
Synthetics	71	138	44	21.52	19.11	10.48

* Total households interviewed.

The assumption of stable consumption.--Another basic assumption (previously mentioned) is that there would be no changes in the percentage of the population reported as regularly consuming any one or all of the commodities considered. Thus, the percentages of the total population which is rice-eating, corn-eating, etc. have been assumed constant. Projections of trends for such percentages of the population would be based on mere guesses (some of which might be "wild"). The agricultural commodities studied, however, are basic to the Filipino diet and way of living. Therefore, the assumption of a stable proportion of the total population consuming these commodities regularly appears to be reasonable.

V. SUPPLY ANALYSIS AND PROJECTIONS OF DOMESTIC PRODUCTION FOR SELECTED AGRICULTURAL COMMODITIES

The ultimate objective of the supply projections is to evaluate the future domestic production levels of the following selected agricultural commodities: rice, corn, wheat and wheat flour, meat products, dairy products, tobacco, cotton and tallow. The projections will be undertaken for two time periods; 1965 and 1975. For this purpose, the capacity of domestic economy to produce each of the above-mentioned eight agricultural commodities is determined and given an order of magnitude. The capacity of the Philippine economy to produce each of these commodities is dependent, in turn, on physical, technological, and economic conditions which exist or will exist in the future. The physical conditions necessary to produce varying amounts of the commodities under study include soil, climatic, and other physical factors. The study also considers technological factors (the state of the arts), including known methods of production, as well as new techniques. The rate at which they are being adopted is also included in the study. The economic factors considered included costs of production and returns on investments.

The analysis and projections refer both to domestic agricultural production (farm level) and to domestic industrial production (factory level). The capacity of Philippine agriculture to produce the agricultural commodities under study is projected as well as the capacity of the manufacturing sector to process them. Thus, in the projections for tobacco, the growth of the agricultural production of leaf tobacco was projected as well as the growth in the capacity of cigar and cigarette manufacturing firms to produce tobacco products. The projection of manufacturing production is really a projection of derived or industrial demand.

In addition, the estimates of future agricultural and industrial capacity to produce have been based also on a careful analysis of trends and developments since 1950. They include: expansion of acreage or plant capacity; variations in yields per unit of land; pest and disease control; production costs; technological innovations; scale of operations; institutional factors (such as landlord-tenant relationships); and government programs.

While the capacity of the Philippines to produce various amounts of the eight agricultural commodities are projected on the above basis, the production requirements are ultimately determined by the final demand of households, government, exports, and other such sectors. The projection of the production requirements is undertaken through an input-output analysis of the various sectors comprising the Philippine economy. The projections of domestic production capacities serve as the constraints on the domestic production requirements. In general, if the projected feasible levels of domestic production fall short of production requirements in some sectors, either there are imports or there are reductions in final demand.

A. Palay and Rice

The production of palay or rough rice constitutes about 40 percent of total agricultural production in the Philippines. Rice milling, on the other hand, accounts for an estimated 45 percent of total production of the manufacturing sector. The future supply of rough rice depends basically on the rate of expansion of land area devoted to this crop and on expected yields per unit of land. The increase in the rice supply, given the level of palay production, is determined by the capacity, utilization and expansion of rice mills and changes in the milling recovery rates.

1. Projections of Palay Production

Favorable soil and climatic conditions account for rice culture in almost all parts of the Philippines. The best rice soils, however, are silts or loams stretched over a layer of clay or impervious subsoil capable of holding water. Alluvial plains and deltas are ideal sites for rice production. Thus, the most important rice producing regions are the Central Plain of Luzon, the Cagayan Valley, and the delta lands of the West Visayan islands. These three regions contribute about 55 percent of the nation's production of this crop. Generally speaking, rice growing requires two general types of seasons, the dry and the wet (or rainy). There must be some water during planting and a dry spell during harvest. Since the entire Philippines falls within those dichotomous categories, with some variations regarding duration or occurrence of the seasons, rice is planted and harvested almost throughout the year. However, about 52 percent of palay production is harvested during the 3 months from October to December.

All farmers in the country are acquainted, in varying degrees, with rice culture. During the last 5 years, however, two methods of rice culture have been introduced: the so-called Masagana and Margate systems. A third technological innovation (ratooning) has received extensive experimentation, but has not been adopted to any significant extent. The Masagana and the Margate systems follow the traditional procedures of rice culture, but with significant improvements particularly in transplanting and weeding. In the traditional system, uniform distances between plants are not observed. However, the Masagana system recommends uniform spacing between hills (depending on the soil and on the rice variety planted). The Margate system follows a strict distance of 50 centimeters between hills. The uniform straight spacing of the Masagana and the Margate methods allows for easy semimechanical weeding, a task which the traditional method usually omits. Also, the traditional method usually requires 25 gantas of seeds to plant a hectare, as against 10 gantas for the Masagana and 4 to 5 gantas for the Margate systems. 48/ The Masagana system which incorporates proven good practices in rice culture (said to be similar to the so-called Komo method of Japan) is more widely adopted than the Margate since the former system is being demonstrated and propagated by the government Bureau of Agricultural Extension. During the 1959-60 crop year, there were some 89,000 rice farmers using the Masagana system compared to about 200 farmers in 1954-55. These farmers cultivated some 140,000 hectares and obtained an average yield of 55 cavans per hectare in 1959-60. A rigid test of the Masagana, Margate, and traditional systems of rice culture (under the auspices of the National Science Development Board in 1960) indicated that the Masagana system produced the highest yield per hectare.

Together with the efforts to extend the adoption of the Masagana system, the Philippine government initiated a production subsidy program for rice in 1958. The subsidy program included (1) research and experimentation on various seed varieties, (2) the distribution of fertilizers and certified rice sees and (3) their sale to farmers below procurement cost (fertilizers sold to farmers at about 50 percent of the current market or commercial price). For the first year the subsidy reached P20 million, of which P13.5 million went to the procurement and distribution of fertilizer. Still in force, the

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48/ A method of growing seedlings has also been practiced, called the "Dapog" method. This method requires only two gantas of seeds to plant one hectare of rice, consists of soaking seeds, over layers of bark of the banana tree. After the seeds have sprouted the bark layer is rolled and brought to the fields. This method eliminates transplanting operations.

program has succeeded in distributing some 20,000 cavans of certified rice sees of the high-yielding varieties recommended by the Seed Board. While about 2 million bags of fertilizer have been distributed under the program, the effects of the fertilizer program, however, are difficult to evaluate in view of reports regarding irregularities in their distribution. Even nonrice producers were given subsidy fertilizers, and rice producers who managed to acquire fertilizers used them for other (usually highly commercial) crops.

An attempt to reorganize the marketing system for rice and other agricultural commodities through the development of agricultural marketing cooperatives is now believed to have suffered serious setbacks. Under this program, farmers have obtained loans from the Agricultural Credit and Cooperative Financing Administration (ACCFA) for the production and marketing of agricultural crops. Close to P160 million of ACCFA loans have been granted for the financing and marketing of rice production alone. Nevertheless, the ACCFA loan program has declined rapidly since 1957, and loans granted to rice producers in fiscal year 1960 amounted to only P3.2 million compared with P42 million in 1958.

It is believed that the sharing systems between rice farm landlords and tenants have changed radically since Republic Act 1199 was promulgated in 1954. The ability of the tenant to shift to a better sharing system has been limited by social inhibitions such as the reluctance of farmers and landlords to change the status quo, and by the lack of necessary complementary measures, such as adequate credit for production purposes.

Expansion of acreage.-- The area planted to rice has increased at an average yearly (geometric) rate of 2.5 percent from 1939 to 1959. During the last 10 years, however, the expansion in area planted has been largely due to the increase in upland rice. Thus, the area planted to lowland rice (first and second crops) increased by only about 90,000 hectares from 1953 to 1959, compared to an increase in the area planted to upland rice of about 236,000 hectares. In terms of the total area planted to rice, the percentage of upland rice moved from 21.4 percent in 1948 to 27.6 percent in 1959.

The pattern of acreage expansion implies several facts. Firstly, the available lowland area for rice production is rapidly approaching a limit with the rate of increase in lowland rice area increasing only slightly since 1939. This is particularly true with respect to irrigated areas as shown below.

Type of Area	Area Planted 1939	Area Planted 1959	Annual Rate of Increase in Area Planted 1939-1959
	(Thousand hectares)		(Percent)
Lowland: 1st Crop	1,290.6	1,817.3	1.72
Irrigated	494.1	545.0	0.49
Unirrigated	796.5	1,272.3	2.13
Lowland: 2nd Crop	116.3	334.1	5.43
Irrigated	76.9	149.3	3.35
Unirrigated	39.4	184.8	8.10
Upland	423.1	819.4	3.36
Total	1,830.0	2,970.8	2.5

Secondly, many small farmers producing on subsistence levels plant rice for their own consumption, sometimes on land not particularly suited to rice production. The only available land is upland.

The principle rice producing regions on Luzon are dominantly lowland-rice areas, while major rice growing areas in Visayas and Mindanao are dominantly upland-rice areas as indicated below.

Region	1959 Production Within the Region as a Percentage of Total Production	1959 Upland Rice Area as Percentage of Total Rice Area Within the Region
Luzon		
Central Luzon	31.5	7.3
Cagayan Valley	9.0	9.4
Southern Tagalog	13.1	52.9
Visayas		
Western Visayas	13.3	29.0
Mindanao		
Southwest Mindanao	8.7	63.4

The future expansion of the area planted to rice, therefore, is expected to consist in a more rapid expansion of upland rice hectarage. Projections of area planted to rice up to 1965 and to 1975, on the basis of this main assumption, are as follows:

Type of Area	1965		1975	
	Hectares (Thousands)	% Distribution	Hectares (Thousands)	% Distribution
Lowland: 1st Crop	2,019	57.78	2,437	51.61
Irrigated	556	15.91	589	12.47
Unirrigated	1,463	41.87	1,848	39.14
Lowland: 2nd Crop	476	13.62	895	18.97
Irrigated	181	5.18	252	5.35
Unirrigated	295	8.44	643	13.62
Upland	999	28.60	1,390	29.42
Total	3,494	100.00	4,722	100.00

The projection of the irrigated rice area takes little account of the current government program (National Economic Council) to expand and construct more and better irrigation systems both of the gravity and pump type. While the NEC program for fiscal years 1957 to 1961 envisions an increase in irrigated area planted to rice of about 65,000 hectares yearly, the current program covering fiscal years 1959 to 1962 now appears to emphasize fertilizer application and high-yielding varieties rather than irrigation.

Yields per hectare.--As shown below, the national average palay yield per hectare has increased very little since the turn of the century:

Year	Average Yield Per Hectare: In Cavans (Palay, 44 Kgs./Cavan)
1903-1919	19.4
1920-1929	26.2
1930-1939	25.9
1940-1949	24.6
1950-1959	26.8

Yields per hectare by type of farming have also remained relatively stable:

Type of Farming	Yield Per Hectare			
	1939	1948	1956	1959
	(Cavans of Palay)			
Lowland: 1st Crop				
Irrigated	30.3	25.36	40.4	41.7
Unirrigated	23.6		29.5	29.8
Lowland: 2nd Crop				
Irrigated	20.2		29.0	38.2
Unirrigated	16.0		18.6	24.7
Upland	16.0	19.9	16.5	15.6
Overall Average	25.56	25.14	27.1	28.2

The Masagana system and the government program of procuring and distributing fertilizer and certified seeds of high-yielding varieties are the current important factors in increasing yields per hectare. Since 1956, the area covered by the Masagana system has increased by about 25,000 hectares yearly, with yields under this system averaging 55 to 60 cavans (44 kgs. net) of palay per hectare. At the same time, an average of about 1,500 cavans (44 kgs.) of certified seeds have been distributed yearly by the government, as well as fertilizers for about 400,000 hectares of rice land. It is expected that the government rice (and corn) program will continue indefinitely. The present program extends to 1963, but it will probably be further extended.

The establishment of an International Rice Research Institute at the College of Agriculture, University of the Philippines, under the joint sponsorship of the Ford and Rockefeller foundations, will eventually concentrate scientific techniques on rice development. It is expected that the work of the institute, supported by substantial foundation grants, will achieve definite results in the next few years, particularly in the development of new, high-yielding varieties adaptable under Philippine conditions.

Projection of supply of rough rice.--Considering the above information, the domestic production of rough rice has been projected on the following bases:

1. Approximately 300,000 hectares by 1965 and 1 million hectares by 1975 of the area planted to rice will be cultivated by improved systems (such as the Masagana system) with the concomitant application of fertilizers and high-yielding certified seeds; and

2. Upland rice area will continue to expand at the rate observed from 1939 to 1959.

The projections predicated upon the area sown to rice (Table V-1) are as follows:

Year	Production of Rough Rice Cavans of 44 Kgs.	(Thousands)	Metric Tons Equivalent
1965	105,733		4,652.25
1975	150,312		6,613.73

The projected levels of production imply the following yields per hectare by 1965 and 1975:

Year	Yield Per Hectare
1959	28.70
1965	30.30
1975	31.80

In accordance with studies of the National Economic Council, of the total palay production, some 11 percent is not milled for the following reasons:

	Percent of Total Production of Palay
Wastage	1.45
Seeds (one cavan per hectare)	variable
Animal Feeds	6.00

Thus, it is estimated that the amount of rough rice that will be milled by 1965 and 1975 is as follows:

Item	Thousand Cavans of Rough Rice (44 Kgs. per cavan) 1965	1975
A. Total Production	105,733	150,312
Minus: 1. Wastage (1.45%)	1,533	2,180
2. Seeds (one cavan per hectare)	3,494	4,722
3. Animal Feeds (6.00%)	6,344	9,019
B. Total Not Milled	11,371	15,921
C. Total Production to be Milled	94,362 (4,151,928 metric tons)	134,391 (5,913,204 metric tons)

Table V-1.--Projections of Area Planted to Palay By Type of Farming, 1965 and 1975 and Comparisons with 1960

Type of Farming	Yield Per Hectare (Cavans of 44 Kgs.)	Number of Hectares			Production		
		1960	1965	1975	1960	1965	1975
		Thousand Hectares			Thousand Cavans		
A. Masagana/ Margate System with fertilizer and certified seeds							
1. Lowland	-	140	214.2	705.8	7,960	14,767	38,738
a. First Crop	-	110	173.3	516.0	6,400	10,096	29,545
1) Irrigated	80	30	47.7	124.7	2,400	3,816	9,976
2) Unirrigated	50	80	125.6	391.3	4,000	6,280	19,569
b. Second Crop	-	30	40.8	189.8	1,560	2,097	9,193
1) Irrigated	70	12	15.5	53.5	840	1,085	3,745
2) Unirrigated	40	18	25.3	136.2	720	1,012	5,448
2. Upland	30	-	85.8	294.2	-	2,574	8,826
Total		140.0	300.0	1,000.0	7,960	14,767	47,564
B. Non-Masagana/ Margate							
1. Lowland	-	2,254.5	2,280.5	2,626.9	64,050	90,966	85,228
a. First Crop	-	1,912.6	1,845.5	1,920.9	55,193	62,990	64,590
1) Irrigated	45	576.6	508.2	464.1	20,650	22,870	20,886
2) Unirrigated	30	1,336.0	1,337.3	1,456.8	34,543	40,120	43,704
b. Second Crop	-	341.9	435.1	706.0	8,857	13,360	20,638
1) Irrigated	40	154.2	165.5	199.1	4,945	6,620	7,965
2) Unirrigated	25	187.7	269.6	507.0	3,912	6,740	12,673
2. Upland	16	911.0	913.5	1,095.0	12,979	14,616	17,520
Total	-	3,165.5	3,194.1	3,722.0	77,029	90,966	102,748
Grand Total		3,306.4	3,494.1	4,722.0	84,989	105,733	150,312

2. Projections of Milled Rice

Rice milling is one of the major industries in the Philippines. To date, there are approximately 4,130 rice mills throughout the country, which can mill a total of 250,000 cavans of palay in a 12-hour day. However, a substantial amount of palay is still hand-pounded into rice. 49/ The current distribution of rice mills is indicated below.

Type of Rice Milling	Percent of Total Palay Production	Percent Recovery Rate	Estimated Aggregate Daily Capacity (12-hour day)
		(By Weight)	(Thousand Cavans of Palay)
Kiskisan	52.4	62	220,000
Cono	9.2	70	30,000
Satake (Rubber-Roller)	*	70	*
Hand-pounding	19.3	45	--

*Negligible.

The above figures imply that the overall average recovery rate for the Philippines is approximately 56.21 percent. It should be noted that there are approximately 20 kiskisan mills for every cono mill and that hand-pounding is done by rural households for their own consumption.

The cost of a cono mill is reported at about P30,000, compared with the kiskisan mill which is estimated to cost about P10,000. However, recent innovations in rice mills have been introduced particularly with the introduction of so-called "baby" cono mills which are estimated to cost about P12,000. The shift from kiskisan to cono, therefore, may be accelerated. However, it is expected that kiskisan milling will be continued due to the huge investments in such mills.

Noting the above considerations, the production of milled rice has been projected (Table V-2) on the following bases:

1. The number and capacity of kiskisan mills will remain constant, while increases in milling capacity will be due to the increase in the number of cono rice mills. The present capacity of kiskisan mills, therefore, will remain constant at about 220,000 cavans of palay per 12-hour day, or approximately 55 million cavans of palay for a year of 250 days.

2. Hand-pounding of rice is assumed to decrease gradually from about 19.2 percent of total rice milled in 1960 to 10 percent of total rice milled by 1975.

49/ In 1955, the Department of Agriculture estimated that about 38.37 percent of palay production going through some milling process in hand-pounded. However, since then, there is a feeling that this percentage has declined. The Department of Agriculture and Natural Resources are now running a survey regarding the amount of palay hand-pounded. Pending the results of this survey, agriculturists in the government services have ventured the opinion that the amount of rice hand-pounded is now between 25 and 30 percent of total palay production.

The production of milled rice, therefore, (almost all of which is for food consumption) for 1965 and 1975 will be as follows:

Year	Milled Rice Production Metric Tons (Thousands)	Cavans (56 Kgs. Net) (Thousands)
1965	2,646	47,250
1975	3,887	69,411

Table V-2.--Projected Production of Milled Rice, By Type of Rice Milling, 1965 and 1975

Type of Rice Milling	Recovery Rate (By weight) (Percent)	Volume of Palay Milled (Thousand Metric Tons)		Milled Rice Production (Thousand Metric Tons)	
		1965	1975	1965	1975
Kiskisan	65	2,075.9	2,075.9	1,349	1,349
Cono	70	1,433.2	3,246.0	1,017	2,272
Hand-pounding	45	622.8	591.3	280	266
Total	*	4,151.9	5,913.2	2,646	3,887

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*Weighted average for 1965, about 64 percent; for 1975, about 66 percent.

B. Corn

Until recently, corn production in the Philippines has been a minor agricultural activity. From 1915 to 1949, the yearly corn production remained rather stationary at about 7 million cavans (or about 400,000 metric tons). During the last 10 years, however, corn production has more than doubled, increasing from about 570,000 metric tons in 1950 to 1,150,000 metric tons in 1960. Two basic demand factors have contributed to the recent rapid increase in production; (1) the establishment of feed mills to manufacture feeds for a fast growing poultry and swine population; and (2) the increase in the Philippine population.

Almost all corn produced in the country consists of the flint type. The dent (or "soft") corn is grown but in insignificant quantity. Of the flint type, white and yellow varieties are produced for food and for feeds respectively. It is estimated that two-thirds of total corn production is white corn.

1. Projection of corn production.--Corn is grown in nearly all regions in the Philippines. The major corn production areas are the Visayas and Mindanao islands, which in total account for more than 78 percent of the total Philippine corn production. However, only a few farms raise corn as the main crop since it is usually grown or rotated with other crops.

Table V-3.--Projection of Area Planted to Corn, By Type of Farming and of Corn (Shelled) Production, 1960, 1965, and 1975

Type of Farming	Yield per Hectare (Cavans of 57 kgs.)	Hectares Planted			Production		
		1960	1965	1975	1960	1965	1975
		Thousand Hectares			Thousand Cavans		
1. Traditional	10	1,805	2,105	2,900	19,643 a/	21,050	29,000
2. Masagana, with fertilizers and hybrid corn							
a. Government Program	80	10	50	100	800	4,000	8,000
b. Private Sector: Farmers	80	-	25	100	-	2,000	8,000
Total	*	1,815	2,180	3,100	20,443	27,050	45,000

a/ Estimated.

* Average yield per hectare: 1960 - 11.26 cavans (one cavan 57 kilograms);
1965 - 12.41 cavans; and
1975 - 14.75 cavans.

The physical and climatic conditions for corn production are found in most Philippine areas. In general, corn cultivation is extremely crude, with most corn farmers not too much concerned with seed selection and other better cultural techniques. During the last 5 years, the so-called Masagana system of planting corn has been introduced and is being demonstrated by the Bureau of Agricultural Extension. This system of planting requires the application of fertilizer, the planting of corn in straight uniform furrows and intensive cultivation.

In 1958 the government initiated a corn production program. Under this program, the government distributes fertilizer and hybrid corn seed to farmers at less than open market prices. Under this program, about 10,000 hectares of land planted to corn have been fertilized. However, due to insufficient supplies, the distribution of hybrid corn seed has been extremely negligible.

The above governmental program is expected to continue indefinitely.

Expansion in acreage planted.--The yearly area planted to corn has increased as follows:

Period	Yearly Average Hectares* Planted to corn (Thousand Hectares)	Yearly Average Production (Thousand Cavans of 57 Kgs.)
1920-1924	544.2	7,393.2
1925-1929	530.4	7,586.0
1930-1934	557.2	6,521.8
1935-1939	686.2	7,214.2
1940-1949	797.6	8,521.8
1950-1954	1,025.4	12,032.2
1955-1959	1,513.4	15,582.0
1960	1,845.0	20,443.0

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*Areas planted twice were double-counted during 1950 to 1960. The extent of the double-counting is not known. However, in a 1955 survey about one-third of 300 corn farmers questioned planted two crops of corn and about one-fourth planted three crops on the same corn land.

In most parts of Luzon, yellow corn is planted after upland rice or is intercropped among coconut trees. However, in the Cagayan Valley, corn is grown as one of the major crops. In parts of the Visayas, where corn is the main crop, corn is raised twice or thrice within a year.

It is expected that the increase in area planted to corn will be at the rate observed during the last 20 years. Although it is unlikely that new land will be opened for this crop, corn will be grown on a wider area as a second crop (to other crops or to corn itself).

The rate of increase in area planted to corn from 1939 to 1960 has averaged about 3.4 percent annually (geometric). On the basis of this trend, the area planted to corn in 1965 and 1975 will be approximately as follows:

Year	Area Planted to Corn (Thousand Hectares)
1965	2,180
1975	3,100

Yields per hectare.-- The yields per hectare of corn [50] have been as follows:

Period	Average Yield Shelled Corn Per Hectare (Cavans of 57 Kgs.)
1920-1924	13.59
1925-1929	14.30
1930-1934	11.70
1935-1939	10.50
1940-1949	10.68
1950-1954	11.73
1955-1959	10.30
1960	11.08

As shown above, the average yield per hectare of corn has not increased since 1925.

The main factors that will contribute towards raising the yield per hectare are the use of hybrid corn seed and the application of fertilizer. Hybrid seed is produced in small amounts in the Philippines, with current production amounting to about 2,000 cavans (57 kilograms per cavan) yearly. Since the planting requirement for seed is about 5 to 7 gantas per hectare, only 9,000 hectares (about 0.2 percent of total area planted to corn) are now being planted to hybrid corn. Currently, there are two private enterprises producing a yearly average of 1,500 cavans of hybrid corn. In addition, the College of Agriculture (University of the Philippines) and the Bureau of Plant Industry produce some 300 cavans yearly. A few, highly-trained individual farmers are engaged in a very limited production of hybrid corn. Due to the lack of hybrid seed, the government program mentioned above has distributed only about 200 cavans of hybrid corn seed since 1958. Hybrid corn seed for yellow and white corn has been developed which provides yields of about 80 cavans (or 57 kilograms) per hectare.

The production of hybrid corn is expected to accelerate, for the technique of production is well known. However, the main problem will probably be acceptance and wide application of hybrids by farmers.

Tests indicate that yields per hectare can easily be doubled with application of fertilizer. Under the government program, subsidy fertilizer has been applied to some 10,000 hectares annually since 1958. The fertilizer distribution program, together with pest and disease control, is estimated to have raised yield per hectare by about 13 cavans during the crop years 1958-1959 and 1959-1960 (only on a small percentage of total hectares).

Projections of domestic production of corn.--Given the above considerations, the production of shelled corn has been projected on the following basis:

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[50] Yield per hectare means the volume of corn harvested for every hectare planted and harvested at any one time. Thus, double crops are each counted separately.

1. About 2,180,000 hectares will be planted to corn by 1965; and 3,100,000 hectares by 1975.

2. Fifty percent of the goal for the government program with respect to fertilizer distribution will be achieved by 1965. By 1975, there will be full achievement of the government program to distribute enough fertilizer and hybrid corn seed to cover about 100,000 hectares planted to corn. The program is assumed to have a constant coverage. Achievements in 1960 were only about 11 percent of total goal.

3. Farmers will use fertilizer and hybrid seed in addition to that distributed through government programs. It is assumed that the hectares affected by these farmers will be about one-half that of the government program in 1965 and equal to that of the government program (100,000 hectares) by 1975.

4. Production of hybrids will increase rapidly, rising from 2,000 cavans in 1960 to 15,000 cavans in 1965, and to 40,000 cavans in 1975. The area planted to hybrids will be about 75,000 hectares and 200,000 hectares respectively. [51]

5. One of the strong incentives to raise corn production would be the demand for animal feeds. Standard feed formulas for poultry feeds, for instance, include 37 percent to 40 percent corn.

Thus, the production of corn (shelled) by 1965 and 1975 is estimated as follows:

Year	Production of Corn (Shelled) Cavans of 57 Kgs.	Equivalent Metric Tons
	(In Thousands)	
1965	27,050	1,541.9
1975	45,000	2,565.0

A summary of relevant corn projections is shown in Table V-3.

2. Projections of milled (ground) corn.--It is estimated that about 70 percent of the corn production of the country is milled or made into starch. There are some 600 corn mills existing, with an aggregate capacity of 30,000 cavans per 12-hour day or about 515,000 metric tons yearly. The mill production is ground corn, mostly for human consumption.

Most corn mills utilize the dry-grain process. There are only two mills of the more intricate wet-process type, operated by manufacturing enterprises that also produce corn starch and other refined corn products. The capacity of these two corn refining mills is 50,000 tons annually.

A study of the milling recovery of typical dry-process corn mills in the Philippines shows an average recovery rate of 57.0 percent of ground corn (by weight). The by-products account for 27.6 percent, while 15.4 percent constitutes losses. The recovery rate of the wet-process mill is about 60 percent starch, 10 percent feeds, and the balance is germ and other by-products. The capacity of dry-process mills is expected to expand. On the other hand, the wet-process of milling corn, which is essentially for the purpose of industrial utilization of corn, has been dominated by two firms.

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[51] The seeding rate is about 5 hectares to one cavan (57 kgs.) of corn.

The production of milled corn and corn starch are projected as follows:

Product	Recovery Rate	Shelled Corn Utilized by Mills* (Thousand Metric Tons)		Finished Product (Thousand Metric Tons)	
		1965	1975	1965	1975
Milled Corn	50	1,014.35	1,680.86	577.07	956.54
Corn Starch	60	36.93	57.63	22.16	30.98
Total		1,051.28	1,732.49	599.23	987.52

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*Approximately 30 percent of shelled corn production is used for feeds; (19 percent), direct food consumption, wastage, and seed.

C. Wheat and Wheat Flour

1. Production of wheat grain.--The production of wheat grain in the Philippines is at an extensive experimental stage. Although wheat growing in the Philippines is not a new enterprise (introduced in the 17th century), wheat culture virtually disappeared when imported wheat flour became cheap shortly after the American occupation. However, some wheat continued to be grown on a limited scale in the Cagayan Valley until the Second World War. There are certain areas in the Philippines where soil and climatic conditions are deemed suitable for wheat culture, such as Batangas, Cavite, the Cagayan Valley, the Bukidnon Plateau, Lanao and Cotabato.

Extensive studies and experiments in wheat culture are being undertaken jointly by the government (the Bureau of Plant Industry), by universities (the Agriculture Colleges of the University of the Philippines and the Araneta University), and by flour millers (Republic Flour Mills). Recently, an agreement for a cooperative wheat improvement and production program was signed by the above government agencies, universities, and the Philippine Flour Millers Association.

At present, the main problems in the domestic wheat grain production are: (1) the development of a strain of a stable, high-yielding variety of wheat that can be planted on a commercial scale, under Philippine conditions; and (2) the low prices being currently offered by flour mills for domestically produced wheat (P0.20 to P0.26 per kilogram), which are not adequate to provide effective incentives for increasing production. Another problem is the lack of any definite government program to support wheat production. The present appropriation of the Bureau of Plant Industry for wheat culture experiments (including personnel) is reportedly only P20,000 per year.

The projection of the domestic production of wheat grain to 1965 and 1975 assumes the following:

(1) After 1965 there will be developed (an expectation based on the opinions of the

wheat technologists of the Bureau of Plant Industry) a variety of wheat adaptable to Philippine conditions. By 1966, wheat seed will be distributed to about 100 farmers (with large holdings) for the individual planting of one hectare of wheat.

(2). On the assumption that the area planted to wheat will increase by 100 hectares yearly after 1966, land area planted to wheat by 1975 will reach about 1,000 hectares.

(3). Present tests indicate yields per hectare from 7 to 16 cavans (of 44 kgs. net) or 300 kilograms to 700 kilograms per hectare. If an average yield of 12 cavans or about 500 kilograms per hectare is assumed, by 1975 the Philippines will have a modest wheat grain production of some 500 metric tons.

2. Projections of the supply of wheat flour.--Since the middle of 1901, four flour mills have been established with an aggregate annual capacity production of 251,000 long tons of wheat flour. A fifth flour mill is now under construction with a capacity of 50,000 long tons per year. The machinery for a sixth flour mill with an equal capacity is being negotiated. Two new applications for establishing mills with a combined capacity of 110,000 long tons have been reportedly filed with the National Economic Council.

The projections of milling capacities to 1965 and 1975 have been accomplished on the basis of the following considerations:

(1). By 1965, six flour mills will be in operation. Assuming full operating capacity, the aggregate output will be approximately 351,000 long tons of wheat flour in 1965.

(2). Based on current reports, there are three more corporations planning to establish flour mills, but who have not yet formally submitted any application to the National Economic Council (NEC), as present procedures require. Since the NEC suggests a minimum capacity of 40,000 long tons for flour mills (based on a study that a lesser scale of operations is not economical), it is expected that, if the plans of these three corporations materialize by 1975, there will be an additional capacity from 1965 to 1975 of some 120,000 long tons. Thus by 1975 the total flour milling capacity is projected at 471,000 long tons (or 476,300 metric tons) of flour.

3. Projections of the supply of bakery products.--Of the 5,000 bakeries operating in the Philippines in 1960, each consumed an estimated average of 300 pounds (or 136.4 kilograms) of flour daily.

From 1948 to 1960, the number of bakeries has grown at an approximate annual rate of 5.8 percent. However, most existing bakeries are small units, using crude baking methods and mixing dough by hand. A study by the Filipino Baker's Association reports that there is not a single bakery in the country that has been completely mechanized (bakeries being distinguished from biscuit and cracker factories, which are largely mechanized). The current program of the above association is to promote more "scientific" baking (baking and bread making with the use of some mechanical baking equipment and with the application of uniform formulas). If this program is implemented, the number of small bakeries may be reduced in favor of larger and more efficient bakeries. The biscuit and cracker factories, as distinguished from bakeries, will continue to be highly mechanized.

Projections of the supply of bakery products including biscuits and crackers, expressed in terms of their wheat flour equivalent for 1965 and 1975, are as follows:

Year	Output of Bakery Products (Thousand Metric Tons of Wheat Flour)
1965	325
1975	570

4. Projections of supply of other flour products.--Domestic production of macaroni and vermicelli and of wheat flour used as glue extenders for plywood and veneer have been estimated as follows:

Product	Industrial Demand in Wheat Flour Equivalent (Thousand Metric Tons)	
	1965	1975
Macaroni, vermicelli	6.5	11.4
Others (plywood and veneer, etc.)	29.5	52.2
Total	36.0	63.6

D. Meat and Meat Products

The projections of the domestic production of meat and meat products are based on (1) projections of the country's livestock population; (2) estimates of the ratios of slaughter to total population; (3) estimates of the average carcass weight of meat animals slaughtered; and (4) developments in the meat processing industry. The first is a function of such variables as the available grazing land, the availability of feeds, cost of production, and technological improvements (such as artificial insemination). The second depends on such factors as prices of meat animals and government policy (such as the banning of carabao slaughter since 1954). The third is based on stock breeding or upgrading, availability of feeds and concentrates, and practices with respect to "finishing" cattle, swine, and other meat animals. Finally, the fourth item depends on the available supply of economically priced meat of given quality and the profitability of the meat processing enterprise.

1. Projection of the livestock population.--Livestock produced for meat purposes include: (a) carabao, (b) cattle, (c) swine, (d) poultry and (e) goats and sheep. Although horses are to a limited extent slaughtered for meat, this particular animal is not explicitly considered in the discussions.

a. Carabao.--The carabao is the mainstay of the typical Philippine farm--both as a work animal and as a source of meat for food. The carabao and buffalo population growth has been as follows:

Year	Number of Carabaos and Buffaloes
1939	2,922,631
1948	2,934,000*
1956	3,595,000
1960	3,696,000

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*Adjusted for underestimation.

The buffalo population includes some 4,000 Indian buffaloes (Murrah, etc.) which were brought into the Philippines for the purpose of upgrading native stock. The raising of carabaos is mostly in the hands of the small farmer. Also carabaos are the principal beast of burden on the farm.

The average annual rate of growth of the carabao population from 1948 to 1960 has been about 1.94 percent. This slow rate of growth reflects the rampant slaughtering of carabao, particularly from 1948 to 1952. The strict imposition of the 1954 carabao ban, however, would raise the annual rate of growth in the carabao population to that of cattle (3.7 percent per annum). On this basis, the carabao population has been projected on the basis of a 3 percent annual growth rate. Hence, the carabao population will reach 4,285,000 in 1965 and in 1975, about 5,759,000.

b. Cattle population.--The cattle population of the Philippines in 1960 was still below prewar levels indicated below:

Year	Cattle Population
1939	1,349,260
1960	1,110,000

There are two basic methods of producing cattle: The Home Unit type is where one or a few head of cattle are raised and fed off farm waste as well as on small communal pastures adjoining cultivated fields. The Ranch type involves the large scale breeding of cattle. It is estimated that only about 15 percent to 20 percent of total cattle production is on ranches, with the majority of the cattle population located on small farm units.

Despite the low postwar production of cattle, cattle raising in the Philippines is a simpler operation than in temperate areas. There are extensive grazing lands still unutilized. Cattle science in the country has developed at a faster rate than other countries in this part of the world, and prices of beef are high. The above paradox reflects the following conditions:

(1) Unstable conditions after the war.

(2) Indiscriminate slaughter of cattle due to high prices for beef.

(3) Large initial investment requirements for ranch-type cattle raising.

(4) Insufficient credit assistance available to the industry (in comparison with other crops).

The annual growth rate of the cattle population from 1949 to 1959, however, has been fairly rapid at about 3.7 percent. The growth rate has accelerated somewhat from the importation of stocks for breeding purposes.

The annual growth rate of the cattle population of 3.7 percent can be sustained. On this basis, the population of cattle by 1965 and 1975 is projected as follows:

Year	Cattle Population (Thousands)
1965	1,284
1975	1,914

c. Swine.--Philippine swine belong mostly to the "lean or bacon" type. The "lard or ham type" species of swine have been introduced with some success (such as the Berkjala: a cross of the Philippine strain of swine called Jalajala and the Berkshire).

The swine population in the Philippines has been increasing at about 6.4 percent annually from 1949 to 1959. From a population of about 3,533,000 in 1949, the hog population rose to 6,574,000 in 1959.

On the basis of the growth rate given, the hog population by 1965 and 1975 will be as follows:

Year	Swine Population (Thousands)
1965	8,425
1975	16,667

d. Chickens and other poultry.--Most Philippine farmers raise poultry. Most chickens (about 95 percent) are of the native type, for meat and eggs. Most hybrids, of which the White Leghorn is the most popular, are raised for egg production.

The chicken population has increased at about 9.8 percent per annum from 1949 to 1959:

Year	Number of Chickens (Thousands)
1949	21,911
1954	39,805
1959	56,142

Many foreign, general purpose types of chickens have been introduced into this country. Some have been found adaptable to Philippine conditions. However, the native chicken, because of its "availability, hardiness, and ability to secure its sustenance in the field" will likely continue to constitute the bulk of the future poultry population.

Other poultry (turkeys, ducks and pigeons) constitute a relatively small proportion of the poultry population, compared with the chicken population. Most ducks raised in the vicinity of the Metropolitan Manila Area are raised for eggs or for "balut" (a native egg delicacy). The Philippine duck raisers keep Mallard ducks. Turkey raising, on the other hand, is limited due to the relatively small demand for this bird and its high price. Pigeon raising is relatively new in this country. The population of ducks and turkey during 1949, 1954 and 1959 has been as follows:

Year	Ducks	Turkey
	(In Thousands)	
1949	635	25
1954	1,379	30
1959	2,097	41

2. Ratio of animals slaughtered to total population.--The number of animals slaughtered in any one year appears to be a stable proportion of the total population (except for carabao, on which there is a slaughter ban).

a. Cattle.--Based on available data, about 32 percent of the total cattle population is being slaughtered annually:

Year	Percent of Population Slaughtered for Meat
1955	31.8
1956	31.9
1957	31.6
1958	33.5
1959	28.3

Between regions, the ratio of livestock slaughtered for meat to total livestock population varies from 11 percent to about 58 percent, with regions close to Metropolitan Manila having the highest ratios. Among other regions, the ratio appears stable.

On the basis of the stable percentage of cattle slaughtered in relation to total population, the number of cows that will be slaughtered for meat in 1965 and 1975 will be as follows:

Year	Number Slaughtered (In Thousands)
1965	410.9
1975	612.5

b. Carabaos.--In 1938, a total of about 130,140 carabaos were slaughtered, representing approximately 6 percent of the total carabao population at that time. In 1955, because of the carabao ban, only about 0.6 percent of the total carabao population were reportedly slaughtered for meat purposes. However, the percentage of carabaos slaughtered to total population has been increasing steadily since the ban was first imposed, and in 1959, this percentage was close to 2 percent.

The carabao meat market provides an outlet for bulls and for old and decrepit carabaos, allowing farmers to convert their surplus stocks to cash and to facilitate the improvement of the remaining animals.

The numbers of carabaos slaughtered, however, are likely underestimated (some studies indicate underestimation of about 71 percent). Correction for underestimation brings the percentage of carabaos slaughtered to population in 1959 up to about 3.3 percent (instead of 2 percent).

The low price of carabao beef (about 50 percent of cattle beef) creates a high demand for this type of meat. With the gradual relaxation of the ban and low prices, the number of carabaos slaughtered for meat will increase in relation to carabao population. Projections of the number slaughtered by 1965 and 1975 are as follows:

Year	Percent of Carabao Population Slaughtered	Number Slaughtered (In Thousands)
1965	4.0	171.4
1975	6.0	345.5

The assumed rate of slaughter takes into consideration the precent carabao-land ratio of about one carabao for every two hectares. The carabao population of some 5,759,000 in 1975 allows for this ratio (on the basis of projected land cultivated in 1965 and 1975) although 6 percent of the projected carabao population may be slaughtered for meat.

c. Swine.--Swine dominate the market as the source of meat. Approximately 50 to 54 percent of the swine population is slaughtered for pork yearly. The short gestation period and the large litters of hogs allow a high ratio of slaughter. This ratio appears to be stable. If the ratio is maintained, the number of hogs expected to be slaughtered in 1965 and 1975 will be as follows:

Year	Number Slaughtered (In Thousands)
1965	4,381.0
1975	8,666.8

d. Chickens.--Approximately 50 percent of the chicken population is slaughtered yearly, for meat purposes:

Year	Population (In Thousands)	No. Slaughtered (In Thousands)	Percentage of Population Slaughtered
1955	44,584	22,838	51.2
1956	49,776	24,548	49.3
1957	51,839	26,252	50.6
1958	52,469	26,346	50.2
1959	56,142	28,776	47.7

The ratio of chickens slaughtered to total chicken population, if assumed to be constant at approximately 50 percent indicates the following number of chickens slaughtered by 1965 and 1975:

Year	Number Slaughtered (In Thousands)
1965	41,760.5
1975	106,358.0

With respect to other poultry such as duck, geese and turkey, only a relatively small proportion of total population is slaughtered. Mallard ducks are often raised for egg production while the population of geese and turkey is relatively small. Approximately 20 percent of the duck population is slaughtered for meat purposes. However, 27 percent of the goose population and 30 percent of the turkey population is slaughtered for meat.

3. Projection of average carcass weight by type of meat animal.--The carcass weights of the various animals slaughtered in the Philippines are as follows:

Livestock	Average Carcass Weight (In Kgs.)
Cattle	135.7
Carabao	165.6
Swine	45.0
Goat	12.0
Chicken	1.2
Ducks	1.3
Geese	2.9
Turkey	4.0
Horses	95.0

A lot of the livestock lose weight during transportation from the farm to the slaughter house. There is no system of slaughtering live animals near their source, refrigerating the carcasses, and transporting the carcasses in refrigerated trucks. Most of the animals that are brought to the slaughter houses, particularly to Manila and other urban centers, are on the hoof. Also, there are no finishing farms near the urban centers which would properly fatten and condition the livestock prior to slaughter. Based on various programs of the government and some private entrepreneurs, it is envisioned that such necessary refrigeration system as well as finishing farms will eventually be established. It is, however, difficult to forecast exactly when such types of operations will be established. On this basis, it has been assumed that the carcass weights of the various meat animals will remain fairly constant to 1965 and 1975; except for cattle and swine. Increases in carcass weights of cattle and swine have been assumed (from 136 kilograms to 140 kilograms and from 45 kilograms to 50 kilograms respectively).

4. Summary.--A summary of the total meat supply from domestic sources by 1965 and 1975 for various types of meat is shown in Table V-4.

Table V-4. -- Livestock Population, Percentage Slaughtered, Average Carcass Weight, and Domestic Meat Supply, 1965 and 1975

Livestock	Rate of Population Growth	Meat Supply				
		Population (Thousands)	Ave. Carcass Wt. (Kgs.)	% of Population Slaughtered	Number Slaughtered (Thousands)	Meat Supply (Metric tons)
1965						
Carabao	3.0	4,285	165.6	4.0	171.4	28,383.8
Cattle	3.7	1,284	135.7	32.0	410.9	55,759.1
Swine	6.4	8,425	45.0	52.0	4,381.0	197,145.0
Goats	5.2	756	12.0	25.0	189.0	2,268.0
Horses	1.5	230	95.0	8.0	18.4	1,748.0
Poultry:						
Chickens	9.8	83,521	1.2	50.0	41,760.5	50,112.6
Ducks	12.7	4,056	1.3	20.0	811.2	1,054.3
Geese	12.1	172	2.9	27.0	46.4	134.6
Turkeys	5.2	49	4.0	30.0	14.7	58.8
Total		-	-	-		336,664.2
1975						
Carabao	-	5,759	165.6	6.0	345.5	57,214.8
Cattle	-	1,914	140.0	32.0	612.5	85,750.0
Swine	-	16,667	50.0	52.0	8,666.8	433,340.0
Goats	-	1,320	12.0	25.0	330.0	3,960.0
Horses	-	271	95.0	8.0	21.7	2,061.5
Poultry:						
Chickens	-	212,716	1.2	50.0	106,358.0	127,629.6
Ducks	-	13,409	1.3	20.0	2,681.8	3,486.3
Geese	-	538	2.9	27.0	145.3	421.4
Turkeys	-	81	4.0	30.0	24.3	97.2
Total	-	-	-	-	-	713,960.8

5. Meat processing industry.--The meat processing industry in the Philippines is now concentrated in the manufacturing of pork products rather than beef. Manufactured pork products include bacon, ham, sausages, and canned pork. Also, the meat processing industry includes poultry (chicken) in the form of native delicacies consumed locally or exported to Filipinos abroad. In 1950, approximately 3,000 metric tons of pork were processed into bacon, ham, and sausages, as well as canned foods, as compared to about 700 metric tons in 1956. The production of some 33 or 34 meat products manufacturing establishments increased more than 4 times from 1956 to 1959.

The concentration of the meat industry on the processing of pork and poultry products is obvious; there is a fairly adequate supply of these types of meat. However, some beef products are also being processed. Since imported beef is usually of the higher quality suitable for processing, some of the raw materials used are often imported frozen beef from Australia and other sources.

The growth of the pork processing industry has resulted in a significant shift in the type of meat imports. In the prewar period, most meat imports were pork products. At present, meat importations are concentrated on beef.

It is envisioned that the meat processing industry in the Philippines will continue to expand at a very rapid rate. The growth in the meat processing industry is expected to cover not only pork and poultry but also beef. In 1959, approximately 3 percent of the domestic hog meat production was processed by the meat products manufacturing sector If the same rapid rate of growth observed during the short period of 1956 and 1959 is assumed to continue, the 1965 production of the meat processing plants will be approximately 6 times that of 1959. This implies that approximately 15,000 metric tons of pork products will be processed or canned. If the same rate of growth is projected to 1975, approximately 150,000 metric tons of pork meat will be processed. This indicates that approximately 7 and 30 percent of total pork supply will be processed in 1965 and 1975 respectively.

The processing of poultry products is envisioned to expand at a slower rate principally because the Filipinos prefer fresh poultry rather than canned poultry products.

A proposed meat canning plant for processing beef into various products is programmed to start operations in late 1962. At full operations, this proposed plant will produce some 30 million pounds of meat and meat products per year. The production is intended to serve the domestic market and the displaced traditional imports of canned beef products.

E. Projections of Dairy Production

Although the demand for dairy products is large, the dairy industry in the Philippines is extremely undeveloped. Almost all milk and dairy products consumed domestically are imported, with importations constituting approximately 5 percent of all imports and 27 percent of food imports. In terms of value, annual importations over the last 10 years averaged about P50 million. Of the limited raw milk production of the Philippines, the main source (80 percent) is the native carabao. Fresh milk production of cattle constitutes nearly 20 percent of the total domestic raw milk production. Goat milk accounts for only 1 percent.

It is estimated that only 4 percent of the total supply of milk comes from domestic production, with 96 percent of the supply imported in various forms of dairy products.

Domestic production of raw milk in 1959 was only about 10,500 metric tons as against total available milk supply of 282,700 metric tons.

Of the total carabao, cattle, and goat production, the estimated number of animals that are milked regularly are as follows:

Year	Estimated Number of Milk Animals			
	Carabao and Buffalo	Cattle		Goats
		Native	Foreign	
1950	9,505	2,180	174	1,437
1955	14,300	3,280	257	2,160
1959	16,732	3,390	750	2,527

1. Growth in the number of milk animals.--Only about 2 percent of the adult female carabaos and of native cattle is used for milk production. However, the dairy cows of the imported foreign breeds are all milk producing and are kept or raised on dairy farms. These imported breeds are of the Western breeds of dairy cows such as Holsteins, Brown Swiss, and Jerseys. Listed under buffalo are the oriental breeds such as the Red Sindhi, Sahiwal, Tharparker and Murrah buffalo.

Table V-5.--Estimated Number of Dairy Animals, 1965 and 1975

Livestock	Ratio of Dairy Type to Total Population *	Estimated Number	
		1965	1975
Carabaos and Buffalo	0.638%	27,340	36,740
Cattle, Total	0.822%	10,550	15,735
Native		8,320	11,235
Pure Breed		2,230	4,500
Goats	0.852%	6,440	11,240
Total		44,330	63,715

*Based on 2 percent of adult females (Sevilla and Villarta). The ratio of adult females to total population according to Sumagui and Trinidad (in the Measurement of Agricultural Income) are as follows: carabaos and buffalo, 31.9 percent; cattle, 41.1 percent; and goats, 42.6 percent.

Source of Basic Data: (1) Juan Sumagui and Levy Trinidad (of NEC), the "Measurement of Agricultural Income." Paper read during the 3rd session of National Income Seminar, U.P. Statistical Center - National Economic Council, April 25, 1960, p. 17 (mimeographed) ; and

(2) N. S. Sevial and N. V. Villarta, (of BAI), "Present Situation Concerning Dairying in Rural and Urban Areas in the Philippines," Philippine Agricultural Situation, March, 1960, p. 2 Agricultural Economics Division, DANR, 1960.

The number of animals milked in the Philippines is extremely low. The low ratio (2 percent) of adult female carabaos and native cattle milked in relation to their population is due basically to the following factors: (1) most carabaos and native cattle are traditionally draft animals; and (2) the absence of an organized marketing system (such as that proposed by the Bureau of Animal Industry for a system of milk collection and processing centers in rural areas) dampens the incentive to expand the number of animals milked.

On the other hand, the number of foreign breeds of dairy cattle imported into the Philippines for milk production has been extremely limited because of the high cost of the animals as well as the high costs of production (for feeds and concentrates). While the oriental breeds (Sindhi, Sahiwal, etc.) have thrived, the experience of the government regarding Western breeds has not been encouraging in terms of adaptability to Philippine conditions. However, foreign dairy cattle breeds raised on private farms appear to have thrived well and reported to be maintaining their high yields.

On the basis of these general considerations, a projection of the number of dairy cows has been made on the following hypotheses:

1. The same ratio of adult female carabaos, cattle, and goats (that is, 2 percent of total adult female population of such animals) will continue to be milked. All dairy cows of foreign breeds, however, will be milked.

2. As shown in the preceding discussion, the rate of growth of the carabao, cattle, and goat population is 3.0 percent, 3.7 percent, and 5.2 percent respectively. These rates of growth will be maintained.

3. The rate of growth of Western breeds of dairy cows is estimated at about 9 percent per annum, a high rate of growth partly sustained through importations of such livestock.

Thus, it is estimated that the number of dairy cows in the Philippines by 1965 and 1975 will be as follows: (also see Table V-5)

Dairy Animals	Number 1965	 1975
Carabaos and Buffalo	27,340	36,740
Cattle		
Native	8,320	11,235
Pure Breeds	2,230	4,500
Goats	6,440	11,240
Total	44,330	63,715

There is adequate grazing land to support these levels of dairy cow population (as well as other livestock).

2. Milk yield per dairy animal.--The dairy carabao and native cattle have an average daily production of 1.5 liters in 200 lactation days, with imported Murrah buffalo producing a higher average of 4 liters in about 280 lactation days per year. Pure breeds of Western dairy cows, however, yield from 8 to 10 liters daily in about 250 lactation days per year (Table V-6).

Table V-6.--Average Milk Yield Per Lactation Period, By Type of Dairy Animal, 1965 and 1975

(Kilograms)

Livestock	Mean Dairy Milk Yield		Average Lactation Period (Days)	Annual Milk Yield	
	High	Low		High	Low
Carabao	2.0	1.5	250	500	375
Buffalo	6.0	4.0	300	1,800	1,200
Native Cattle	2.0	1.5	150	300	225
Pure Breed Cattle	10.0	8.0	250	2,500	2,000
Goats	0.7	0.6	150	50	30

N.B. One liter of milk is approximately 1.03 kilograms.

Sources: (1) P.M. Baluyot,"Commercial Dairying in the Philippines", Livestock Production in the Philippines, 1958;

(2) V. Villegas, The Livestock Industry in the Philippines, (Bul. No. 35, National Research Council);

(3) V. Villegas and E.C. Cruz, "Dairy Qualities of Philippine Cows", The Philippine Agriculturist, Feb., 1958.

The carabao and native cattle yields can be readily raised to 2 liters daily by giving their female species a little more rest and additional fodder.

The carabaos milked on small farms are raised without the benefit of any scientific feeds and concentrates. Dairy cattle, particularly imported breeds kept at government dairy farms and in commercial dairy farms, are given silage, hay, and concentrates daily. The inadequate supply of concentrates in the Philippines, however, prevents their extensive use for increasing milk yield. There is competition between human and livestock needs for concentrates such as copra meal, leguminous seeds (mongo), shrimp (or fresh water prawns), fish meal, corn, and rice. Unless production of these particular products is increased, it is not expected that concentrates will be used extensively in the future.

Table V-7.--Annual Estimated Milk Production: By Kind of Dairy Animal and in Total, 1965 and 1975

(Thousand Kilograms)

Livestock	1965		1975	
	High	Low	High	Low
Carabao	13,670	10,253	18,370	13,778
Native Cattle	2,496	1,872	3,371	2,528
Pure Breed Cattle	5,575	4,460	11,250	9,000
Native Goat	322	193	562	337
Total	22,063	16,778	33,553	25,643

Source: Tables V-5 and V-6.

3. Projection of domestic milk production.--The estimates of fresh or raw milk production in the Philippines by 1965 and 1975 have been obtained on the basis of projected milk animal populations and milk yields (Table V-7).

Year	Total Milk Production (In Metric Tons) High	Low
1965	22,063	16,778
1975	33,553	25,643

4. The milk processing industry.--The small scale farmers traditionally milk their carabaos to provide the raw materials for soft cottage cheese, and for native milk candy ("pastillas de leche"). A significant portion of the carabao milk is sold also as raw milk (there being no existing law that prohibits the selling of raw or unpasteurized milk). However, about 50 percent of carabao milk produced is consumed in the home. Likewise, most of the domestic production of raw milk from native cattle is consumed in the homes.

Milk production of pure breeds on commercial dairy farms is bottled on the farm, or sold to bottling plants and ice cream factories, or sold directly (in stainless steel containers) to U. S. Army and Navy bases in the Philippines.

The industrial demand for domestically produced raw milk in 1960 as a percentage of total domestic production is as follows:

Intermediate Demand From	Percent of Total Production of Raw Milk	
	Carabao Milk	Cow's Milk (foreign breed)
Cottage Cheese	27.5	-
Milk Candy	10.0	-
Bottling Plants/Bottled	9.5	90
Ice Cream/Sherbets	3.0	10
Condenseries (Creameries and Butter Plants)	-	-
Total	50.0	100.0
Home Consumption	50.0	-
Total Production	100.0	100.0

There is now one firm processing milk into cooking butter. Another firm has very tentative plans to establish a 1,000 hectare dairy farm together with a condensery to produce canned evaporated and condensed whole milk. This latter plan, however, has been forestalled because of the competition offered by the filled-milk industry.

At the present time, it is difficult to foresee whether condenseries will be eventually established. Therefore, consideration of this particular milk processing industry is not included.

4. The filled-milk industry in the Philippines.--The high demand for evaporated milk has enabled the successful operation of several filled-milk companies in the Philippines. At present, there are three companies engaged in condensery manufacturing of evaporated filled-milk and one firm engaged in the processing of liquid filled-milk, filled-milk ice cream and other filled-milk products. The reported capacity of the three condenseries is about 140 million pounds of filled milk annually. The liquid filled-milk processing plant has a daily capacity of about 10,000 gallons. Total requirement at full capacity of these filled-milk plants is estimated at about 40 million pounds of powdered skimmed milk.

However, current production of filled-milk condenseries is reported at only one-third of their total rated per annum capacity. The equipment of the three modern condenseries is up to date, and the production of filled-milk is being closely supervised by foreign specialists in the manufacture of such products.

The basic raw material of the filled-milk industry is powdered skimmed milk; that is, nonfat dry milk solids most of which have been imported into this country under Section 402 of the Mutual Security Act of 1954 and a small amount under Public Law 480. Copra or coconut oil is added to the skimmed milk together with vitamins (and water) prior to canning; the vegetable oil constitutes about 6 percent of the total volume.

There has been some controversy regarding the safety and nutritional value of filled milk, particularly with respect to use as baby food. A special study conducted by the National Science Development Board has concluded that the filled-milk production in this country is "chemically safe"; but there are no conclusive clinical findings with respect to whether it is equal in nutritional value with whole milk, particularly as baby food. 52/

In 1960, the importation of skimmed milk for use by the filled-milk industry in the Philippines amounted to about 13.5 million kilograms. It is expected that the importation of this particular product will expand in the future. The filled-milk industry now appears to be a well established industry in the Philippines, employing more than 300 workers. The evaporated and condensed filled-milks locally produced are now being extensively used by households in the low income bracket, usually for mixing with coffee and for other uses. However, no new applications have been received by the National Economic Council for the establishment of an additional filled milk factory. Considering that the three filled milk condensery companies are reportedly operated at one-third of the rated capacity, approval of new or additional filled-milk establishments is not expected in the near future. The low price of filled-milk, which is approximately 70 percent of that of imported evaporated and condensed whole milk, is expected to continue the shift in consumption from whole milk to filled-milk. This will be especially true for households in the low income group (which account for a majority of the population).

F. Cotton and Cotton Textiles

Cotton growing in the Philippines has remained a minor agricultural activity despite the centuries-old knowledge of cotton culture. Cotton is grown in isolated areas of the Philippines, particularly in the Ilocos region, Batangas, and the southern parts of Mindanao.

While cotton growing is extremely limited, the cotton textile industry in the Philippines has grown rapidly over the last 5 years. The raw materials for the textile industry, therefore, have been largely imported. In 1960, domestic production of raw cotton constituted only 1.2 percent of total available supply, indicating a drop from 1959 when domestic production accounted for 2.7 percent of the total available supply. Thus approximately 98 percent of the requirements of cotton textile industry for cotton have been imported over the last 7 years.

1. Production of Cotton

Production of area planted to cotton.--The area planted to cotton from 1955 to 1960 ranged from 2,300 hectares to 3,500 hectares. The expansion of area planted to this crop from 1955 (2,600 hectares) to 1959 (3,510 hectares) was arrested in 1960 when area planted dropped to 2,250 hectares. This substantial reduction was due primarily to a reduction in area planted by the government project. Of the total area planted to cotton, more than 80 percent is accounted for by the government cotton growing project in Cotabato (Mindanao), while about 20 percent is planted by the many small farmers in the Ilocos area, Cagayan Valley, and Batangas.

52/ Under Section 169 of the Philippine Internal Revenue Code, "all condensed skimmed milk and all milk in whatever form, from which the fatty acid has been removed totally or in part, sold or put on sale in the Philippines shall be clearly and legibly marked on its immediate container and in all the languages in which such containers are marked, the words, "This milk is not suitable for nourishment of infants less than one year of age" or with equivalent words. The penalty for violation is P300 fine or a prison term of 6 months or both.

Various studies have indicated the possibility of growing cotton on extensive areas in the Philippines as the major crop or secondary crop. Physical factors allow cotton culture in many parts of the Philippines. Cotton culture is well known to farmers in at least the regions mentioned above. Moreover, various technological problems related to cotton culture have been reportedly solved, at least on an experimental basis.

Primarily, however, economic considerations determine whether farmers will expand the area planted to cotton. For instance, (1) cotton is not a profitable crop measured in terms of the returns on costs; (2) various attempts to plant cotton on a large scale have been set back by uncontrolled infestations of pests (supply of pesticides is almost entirely imported as well as expensive); and (3) the present cost of production is high compared with the landed cost of imported cotton. However, many agriculturists in the government service believe that if a production subsidy and price support program are initiated and established for cotton production, many farmers will grow this crop. Nevertheless, to date, outside of the program of the National Development Company, the government does not have a definite program [53] for directly assisting the production of raw cotton in the Philippines. The NDC is the government agency operating a cotton project in Mindanao. Its project includes the direct production of cotton as well as the operation of a cotton textile mill. Also NDC has a standing program to purchase all domestically produced cotton at 10 centavos per kilogram above the landed cost of imported cotton. However, this price-support program of the NDC is extremely limited due to lack of funds.

It is, therefore, difficult to visualize at the present time the magnitude to which the acreage planted to cotton will expand in the future. In the absence of a definite program which may induce or accelerate expansion of cotton acreage, the area planted to cotton has been projected to 1965 and 1975 on the basis of the rate of growth observed from 1955 to 1959. The projections are:

Year	Annual Growth Rate Area Planted to Cotton (In Percent)	Area Planted (In Hectares)
1965	7.8	5,100
1975	7.8	10,780

Yield of cotton fiber per hectare.-- While many of the small farmers plant the native varieties, namely the Kapas Purao and the Batangas White (which belong to the variety of Asiatic cotton known as Gossypium Herbaceum), the large scale government project in Cotabato has used imported varieties such as the Acala, Coker, Stoneville, and Delta Pine. The Philippine varieties yield only 300 kgs. of seed cotton per hectare. The foreign varieties, however, which have been introduced and strains of which have been developed successfully under Philippine conditions, have an average yield of approximately 800 kgs. of seed cotton. Various varieties that have been trial tested in the government project previously mentioned have estimated yields as high as 2,000 kgs. of seed cotton per hectare.

The Bureau of Plant Industry is distributing high yielding cotton seeds to farmers in the Ilocos area, Batangas, and Mindanao. These seeds are of the so-called Baltazar strains Numbers 1, 2 and 3. Because of the tested adaptability of this variety of cotton to Philippine conditions, it is expected that most farmers who plant cotton will shift to it. This variety has an estimated yield of about 800 kgs. of seed cotton per hectare.

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[53] In 1959, a bill was introduced in the lower house of the Philippine Congress, which proposed to give a cash subsidy of 10 centavos per pound of cotton produced and sold to local spinning mills to be financed from a special tax on imported textiles. This bill has not been passed.

Projection of cotton production.--On the basis of the foregoing considerations and on the further assumption that there will be no government production incentive and price support program for cotton (for instance a price support program on the same scale as that for Virginia leaf tobacco as will be explained below) the domestic production of raw cotton by 1965 and 1975 is estimated as follows:

Year	Production Seed Cotton	 Seeded Cotton
	(In Metric Tons)	
1965	4,080	1,360
1975	8,620	2,870

2. Cotton Textile Industry

The large scale domestic manufacturing of textiles in the Philippines was initiated in 1930 when the Philippine Cotton Mill, a private enterprise, was established. In 1939, the National Development Corporation, a government-owned enterprise, established a cotton textile plant. Destroyed during the second world war, the Philippine Cotton Mill was never rehabilitated. The NDC Textile Mill, however, has been reconstructed and now has a yearly production of some 200 million pounds of yarn and 15 million yards of cloth. Since 1955 private entrepreneurs have entered the textile industry. At present, there are over 20 textile mills concentrated within Metropolitan Manila and equipped with some 461,476 spindles and 14,600 looms.

For purposes of this research study, the projection of the production of the domestic textile industry will be studied in terms of the various stages of manufacture which make up the industry. Each of these stages may be considered as a distinct and separate industry, such as spinning, weaving, and finishing. Also, consideration is given to other related industries such as knitting, thread manufacturing, hosiery, and handweaving, which use yarn as their basic raw material.

Growth of spinning.--As of July 31, 1961, the number of power spindles in operation was reported at 461,476. In addition, 78,684 spindles were under installation as of that date and orders for 77,932 additional spindles have been placed. Thus, the total number of spindles in operation, under installation, and on order totaled 618,092 as of the above date--about nine times the 68,370 spindles reported in 1956.

According to the estimates of the Industrial Development Center (a joint project of the National Economic Council and the U.S. International Cooperation Administration) the reasonable minimum present goal for the number of spindles should be about 410,000. This number of spindles will produce the amount of spun cotton and spun synthetic yarns to supply the Philippine market for the next few years. (The estimate is based on an average yarn count of size 22, at 6,300 hours operating time per spindle per year). The current 3-year program of the National Economic Council calls for a balanced ratio between spindles and looms, and for this purpose it plans for the installation of about 169,000 additional spindles (5,550 additional looms are programmed for installation by 1963 to maintain a balance ratio of 33 spindles per loom). This NEC program brings the number of spindles considerably over the estimated IDC minimum goal of 410,000.

Therefore, it appears that the textile industry programs of the IDC and the NEC have been extremely overshot. The basic reason forwarded for the present excessive capacity of the cotton textile industry is the approval by the Central Bank of foreign exchange to import textile machinery. This action was based on a reportedly independent Central Bank program for the textile industry premised on the integration of the spinning and weaving sectors of the industry with finishing capacity (with the last sector well ahead of the other two sectors).

The spindles now in operation and under installation (about 540,160) can produce 118,800,000 pounds of yarn annually.

Growth of weaving.--The number of looms in operation increased from 2,130 in 1956 to 14,600 by the end of July 1961. About 87.5 percent of the yarn production is absorbed by the power weaving sector, with the balance of 12.5 percent flowing into the knitting, hosiery manufacturing and other minor sectors of the textile industry.

It has been estimated by the Industrial Development Center that a minimum present goal of 11,000 power looms is necessary to produce the amount of cloth to supply the needs of the present Philippine market. The current NEC program proposed to bring the number of looms up to 11,400 by 1963, a little over the IDC minimum goal.

As in spinning, the programs of the IDC and NEC have also been overextended for the same reason (that is, the Central Bank program). The 14,600 power looms installed can produce 385,000,000 square yards of textiles in one year.

Growth in finishing.--The existing capacity of the finishing mills is now almost in balance with the domestic capacity for weaving (and spinning). If the power looms operate at near full capacity, there will be enough gray cloth to sustain the finishing sector of the textile industry at full operational levels. The annual capacity of the finishing mills is about 350 million yards of gray cloth. The existing capacity of finishing mills is not expected to increase between 1960 and 1975.

The knitting industry.--It has been estimated by the Industrial Development Center that the present annual capacity of the circular knitting mills, if put on a three-shift operation, can process more goods than the Philippine market can absorb in four years. In view of this, increases in the current capacity of the circular knitting mills are not expected prior to 1965; probably not before 1975.

Thread manufacture.--The current installed machine capacity of the thread mills is estimated to be able, on a three-shift operation, to process annually more than the Philippine market of thread can absorb in 3 years. In view of this, it is expected that there will be no increases in the existing capacity of thread manufacturing mills prior to 1965; probably not before 1975.

Hand-weaving of narrow fabrics.--Hand-weaving in the Philippines is an old industry. However, most hand looms in existence are antiquated. The slow phase of rural electrification prevents the extensive adaption of power looms. However, current government policy is to assist this traditional industry. For this purpose the NDC has installed a mill in the Ilocos area to produce all the yarns necessary to support the hand-weaving industry in that particular region.

Eventually, however, the hand-foot power weaving sector of the textile industry is expected to diminish as the power weaving sector increases. When the power weaving sector has been fully developed, a small amount of hand weaving is likely to continue to supply handicraft goods and novelties for the tourist trade and other special demand.

Projections of raw cotton requirements by the cotton textile industry.--The textile industry is now well established in the Philippine economy. Investments in this industry have reached substantial levels estimated at some P300 million, and are expected to increase for purposes of balancing the various sectors within the industry.

The current government programs envision the complete integration of the cotton textile industry from spinning, weaving and finishing. Toward this end, the program of the National Economic Council recommends priority in the allocation of foreign exchange for capital goods and raw material imports to this industry. It is foreseen that the industry will continue to expand or develop until the level when all the requirements for cotton textiles in the Philippines shall have been reached.

Taking various trends and programs under consideration, primarily the government policy to achieve self-sufficiency in cotton textile production, the cotton textile industry will have the following levels of operations by 1965 and 1975:

Item	Amount 1960	 1965 (In Thousands)	 1975
1. Estimated consumption of cotton piece goods by households and others - sq. yards	168,000	305,000a/	458,000a/
2. Estimated number of looms required to produce cotton piece goods (24,000 yds. per loom, 3 shifts, per year)	7	12.7b/	19.1
3. Yarns required for cotton piece goods - kilograms	17,300	31,415	47,175
4. Yarns required for knitting and other textile processing (at 0.468 lbs. or 0.213 kgs. per person) - kilograms.	5,920	6,880	9,785
Total Yarn Requirements - kilograms	23,220	38,295	56,960
5. Number of spindles required to produce yarn requirement (at 200 lbs. or 90.9 kgs. of yarn per spindle per year).	258	420	626
6. Estimated raw cotton requirements to produce yarn allowing for 20 percent processing waste and shrinkage - kilograms.	29,025	47,870	71,200

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a/ On the basis of 140 grams of raw cotton per square yard, and on projected household consumption based on income elasticities and household size effect derived from the household budget survey, as follows:

Year	Household Consumption in Terms of Raw Cotton Equivalent (In Metric Tons)
1965	42,670
1975	64,059

This gives the requirements for cotton piece goods in square yards per capita of:

Year	Sq. Yards Per Capita	Population (In Millions)
1960	6.2	27.8
1965	9.4	32.3
1975	10.3	44.5

b/ Assumed to be in operation for cotton textiles. There are now 14.6 thousand looms in operation, of which some are for weaving of synthetic textiles.

G. Tobacco

During the latter part of the 16th century, tobacco seeds of the cigar filler type [54] were introduced in the Philippines by Spanish missionaries from the Americas. The production of the cigar filler leaf tobacco flourished in the Philippines particularly during the 100-year period from 1781, when the Spanish government organized a tobacco monopoly. The tobacco monopoly was abolished in 1882 and its operations were absorbed by private corporation (Tabacalera).

The Virginia leaf tobacco or the so-called aromatic type [55] of leaf tobacco was reportedly introduced in the Philippines in 1924 when trial plantings were first performed by the Bureau of Plant Industry. Prior to that particular period, there were no varieties of aromatic type of tobacco planted in the Philippines. While the cigar filler type of tobacco has been produced extensively for centuries, it was only during the last 5 years that the production of Virginia leaf tobacco became so extensive that it created a surplus in this type of aromatic leaf. The extremely rapid growth in the production of Virginia leaf tobacco has been due to a government price-support program.

In the present study, the discussions will include both the native cigar filler tobacco leaf and the Virginia leaf tobacco.

1. The Native Cigar Filler Leaf Tobacco

The tobacco industry is the oldest industrialized agricultural enterprise in the Philippine economy, antedating the coconut, abaca, and sugar industries which are now the leading agricultural (and export) industries. Although the culture of tobacco was initiated as a type of "colonial" product, it was not exported as leaf but was processed in the Philippines into cigars, cigarettes, chewing tobacco and pipe tobacco. After the Spanish government tobacco monopoly (1781 to 1881) ceased, its business and properties were transferred to a Spanish corporation called the Compania General de Tabacco de Filipinas, commonly known as the Tabacalera. This Spanish corporation still exists today and produces the largest amount of cigars in the Philippines as well as cigarettes made from the native tobacco leaf.

Expansion in acreage.--The culture of the native cigar filler type of tobacco is mainly in the hands of small-scale farmers. This type of tobacco is now grown principally in the Cagayan Valley although areas within the provinces of Cebu, Iloilo and Negros, as well as areas in Northern Mindanao, are planted to this crop. However, outside of the Cagayan Valley most of this type of tobacco is consumed locally. The native leaf tobacco production of the Cagayan Valley, where the Tabacalera operates, is mostly brought to Manila factories for the manufacture of cigars and cigarettes, or for exports. In the Ilocos region, where most of the Virginia leaf tobacco is presently produced, many small-scale farmers also plant native leaf for their own consumption.

The areas planted to native leaf tobacco have declined considerably from prewar levels:

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[54] As distinguished from wrapper tobacco. Wrapper tobacco is barely grown in the Philippines.

[55] Other types of tobacco used in the manufacture of aromatic cigarettes include White Burley (the domestic production of which is negligible) and Turkish tobacco (which is raised by only a few farmers, mainly for their own consumption).

Year	Area Planted (In Hectares)	Production (Thousand Kg.)
1939	57,630	32,015
1950	46,070	26,398
1955	37,140	20,040
1960	44,110	29,765

The decline in acreage (and production) has been attributed to the decline in export demand for leaf tobacco, and, to a smaller extent, to the loss of the United States market for Philippine cigars. Leaf exports to Spain (which accounted for about 75 percent to 80 percent of Philippine exports from 1950 to 1960) have declined rapidly from 1952 to 1960. The decrease in exports of leaf might be attributable to the following: (1) the drop in production of native filler leaf due to the shift towards production of Virginia leaf, which, in turn, is due to a price-support program for Virginia leaf tobacco; (2) the decline in the quality of native filler leaf, resulting in a decrease in the demand of foreign markets; and (3) the relatively rapid increase in the production of filler leaf by other countries in competition with the Philippines. In the case of cigars, exports of cigars to the United States in 1960 amounted to only 6.95 million pieces as against a tariff quota of 200 million cigars; 56/ thus, only 3.5 percent of the cigar quota was met in 1960. The United States market for Philippine cigars was replaced to a significant extent by Cuban cigars, due primarily to the Second World War, which cut off imports from the Philippines. Attempts are now being made to re-expand the Philippine cigar market in the United States.

There are plans to mechanize the production of Philippine cigars, thus mass-producing cheap cigars which can be absorbed readily by the export market. However, at present only one cigar factory is reportedly mechanized. Further mechanization appears to be hampered by the adverse, if short-sighted, view of some of the labor elements in the industry who look at the mechanization of cigar production as a threat to their present jobs. 57/

The growth in the acreage planted to the native cigar filler leaf tobacco, therefore, depends on the future demand (particularly export demand) for products made from this type of tobacco leaf. The presence of the tariff quotas in the United States for Philippine cigars constitutes a strong, if dormant, incentive for expanding acreage and production. The market for cigarettes made from native cigar filler type leaf tobacco is also expanding because of the low price of cigarettes made from such tobacco (with king-sized cigarettes made of cigar filler leaf type of tobacco priced at approximately 40 percent of the regular-sized cigarettes made from Virginia leaf).

56/ Under the Revised Trade Agreement, the duty-free quota on cigars will diminish as follows:

Year	Duty-free cigars	Year	Duty-free cigars	Year	Duty-free cigars
Original	200,000,000	1959-61	180,000,000	1965-67	120,000,000
1956-58	190,000,000	1962-64	160,000,000	1968-70	80,000,000
				1971-73	40,000,000

57/ Recently, however, the cornerstone for a completely mechanized cigar-making plant was laid in the province of Isabela by the Philippine Tobacco Administration (a government agency). Two other cigar factories are seriously contemplating the installation of cigar-making machines.

There are no technological obstacles in the production of the native cigar filler tobacco; culture of this crop is well established. If demand expands and the market price is good, it is expected that production levels can readily respond to market demand.

Yield per hectare.--Although studies indicate the possibilities of obtaining 800 kilograms of cigar filler leaf tobacco 58/ per hectare, actual per hectare yields are only a little over 500 kilograms. The yield per hectare has been relatively stable:

Year	Yield Per Hectare (Kilograms)
1939	555
1948	514
1959	520

The typical production of native leaf tobacco consists of fairly simple farm operations, with very little application of fertilizers or insecticides. Based on a 1956 cost of production survey, the average farm expense to produce 502 kgs. of tobacco per hectare is approximately P412.54 (including cost of curing). Of this total cost of production per hectare, the average expense for fertilizers reported was only P1.10; and for insecticides, P2.41. Most of the expenses went into farm operations such as land preparation, care of plant, and harvesting and other operating expenses. Included in the above mentioned cost are the expenses for curing, fermenting, and classification and baling of the tobacco leaf. The native cigar filler leaf tobacco is usually air cured.

The growth in the manufacture of cigars and cigarettes from native leaf.--The manufacture of cigars is largely a hand operation, from the stripping of the leaves to the rolling and packaging of the cigars. Some technological improvements have been introduced to facilitate hand rolling, such as the use of molds for cigars. For the manufacture of cigarettes from native leaf, operations are completely mechanized and are similar (as far as manufacturing process is concerned) with the manufacture of Virginia leaf cigarettes.

The production of cigars in the Philippines has declined considerably over the last 10 years:

Year	Cigar Production (In million pieces)
(Average) 1937-1941	313.0
1946	48.7
1947	58.0
1948	87.6
1949	93.3
1950	100.1
1951	91.6
1952	88.9
1953	97.6
1954	93.1
1955	87.8
1956	92.2
1957	77.2
1958	59.4
1959	55.0

58/ Cured.

The volume of cigarettes produced from native leaf has increased since 1958, primarily because of the increase in demand for filtered cigarettes made from this leaf. Production has been as follows for selected years from 1950:

Year	Cigarette Production (in million pieces)
1950	3,963.1
1955	3,483.8
1958	8,348.5

Projection of the domestic production of native leaf.--For purposes of projecting the acreage and yield for native leaf tobacco, it is essential that the final demand of this particular commodity, in terms of its production such as cigars and cigarettes, be determined. As will be indicated below, the projected demand for manufactured native leaf tobacco products by Philippine households will be approximately 10,270 metric tons in 1965 and 15,900 metric tons by 1975.

Projections of native cigar filler leaf tobacco to 1965 and 1975 have been attempted on the basis that the area planted to this crop will respond readily to changes in the final demand. This implies that there will be a balance, at least, between domestic supply and total demand (including exports) for native cigar filler leaf.

Since total final demand 59/ is estimated at 18,680 metric tons by 1965 and 26,480 metric tons by 1975, domestic production will be at least at these levels. The average production per year from 1950 to 1960 has already reached about 23,300 metric tons.

59/

Final Demand of	1965	1975
	(In Thousand Metric Tons of Leaf Equivalent)	
Households	10.27*	15.9
Exports	8.00**	10.00**
Inventory Changes***	0.41	0.58
	18.68	26.48

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*Under Hypothesis A of the income projections; for Hypothesis B, household demand goes up to 12.47 thousand metric tons.

**Assuming fulfillment of United States Tariff quota of 200 million cigars (equivalent to 2 million kilograms of leaf). The bulk of exports will be in terms of leaf to Spain and other countries.

***Based on the inventory ratio for the base year 1956 (of 2.2 percent of total final demand).

2. Virginia Leaf Tobacco

Expansion in acreage.--The area planted to Virginia leaf tobacco was extremely limited prior to 1955. Area planted in 1953 and 1954 averaged about 3,800 hectares with an average production during those years of about 1 million kilograms. In 1955, a price-support program for Virginia leaf tobacco was established through Republic Act No. 1194. Support prices ranged from P1.50 to P3.60 per kilogram of flue-cured leaf. Also, the price-support program established support prices for sun-dried Virginia leaf tobacco ranging from P0.80 to P1.50 per kilogram. Because of this subsidy program, there was over a threefold increase in the area planted to Virginia leaf from 1954 to 1955:

Year	Area Planted (Hectares)
1954	4,710
1955	15,460
1956	35,330
1957	37,710
1958	48,700
1959	48,970
1960	51,020

In 1960, the price support for sun-dried Virginia leaf was removed and the subsidy price limited only to flue-cured leaf.

The price-support program has created not only a tremendous expansion in acreage and production of Virginia leaf but also huge surplus stocks of Virginia leaf tobacco. The program makes it mandatory for the Central Bank to provide all the necessary funds as loans (with 2-year maturity) to the agency in charge of the subsidy program for the purpose of purchasing all the Virginia leaf tobacco domestically produced. The continued high level of production and the huge surplus stocks have begun to strain Central Bank resources and are contributing somewhat to inflationary tendencies, since the price-support program is financed by bond issues of the Central Bank.

During the last 3 years, there has been a leveling of the subsidy program in terms of the funds available from the Central Bank. Moreover, there is a growing opinion in the Philippines that the price-support program should now be abolished since it has accomplished its objective of raising production levels of Virginia leaf tobacco.

However, most of the Virginia leaf tobacco production is of the lower qualities. Only about 2.5 percent of the production is classified in terms of Class A leaf tobacco, with more than 50 percent of the production being in terms of Classes C and D. It is believed that the ability of the Philippines to produce Class A tobacco will not exceed 5 percent of total production, because this highest quality of leaf requires strict soil and climatic conditions.

At the same time, the local cigarette manufacturers feel that there is a shortage in the higher classes of Virginia leaf, which should be imported for blending purposes. The Cabinet and the President of the Philippines have recently approved the importation of 4.5 million kilograms of high quality Virginia leaf, but require the importer to purchase 4 kilograms of domestically produced Virginia leaf for every kilogram which he imports. Thus, part of the government surplus stocks will be purchased, but its eventual disposition is merely transferred from government to private hands.

In veiw of the above general considerations, it is believed that the price-support program for Virginia leaf tobacco will continue to to 1965 since the current feeling of Congress is that it cannot repeal the subsidy law without serious political repercussions.

Projection of yield.--The present average production per hectare obtained by farmers planting Virginia leaf tobacco is approximately 532.4 kilograms of flue-cured leaf. The average cost of production per kilogram is approximately P0.71, if labor cost of the farm is estimated on the basis of the minimum daily wage rate of P2.50; or about P0.60 per kilogram, if the prevailing labor wages are considered instead of the minimum wage. There are studies indicating that production per hectare of Virginia leaf tobacco can be readily increased to 750 kilograms per hectare. In a survey conducted in 1956, farmers in some regions produced as much as 860 kilograms of flue-cured leaf per hectare.

The increases in yield, however, cannot be expected to be obtained from extensive application of fertilizer. The application of fertilizers to Virginia leaf tobacco is a delicate operation, since some fertilizers, for instance nitrogen, produce thick leaves with a coarse texture. Moreover, the tobacco is not a water-loving plant such as rice and corn. Increases in yield, therefore, will be expected only with improvements in farm operations and in flue-curing. In addition, high yielding seeds are required as well as more effective disease control.

On the whole, the current yield per hectare of approximately 530 kilograms is considered low by some agriculturists. It is expected, therefore, that some gradual improvements will be forthcoming with respect to yields of flue-cured leaf per hectare. For purposes of production, it is assumed that yield per hectare of flue-cured leaf will reach 600 kilograms by 1965 and 750 kilograms by 1975.

Projection of domestic production of Virginia leaf.--Projections of the domestic production of Virginia leaf tobacco to 1965 and 1975 have been undertaken on the basis of the following assumptions:

1. The price-support and purchase program will continue to 1965 and 1975, but will assume a constant magnitude of approximately 35 million kilograms annually. This average annual procurement program is slightly higher than the 1957-60 annual average of about 31 million kilograms. The level has been maintained at a constant level on the further assumption that this is the maximum yearly capacity of government sources to sustain the program.

2. The government price-support purchase program for Virginia leaf tobacco will cover only about 75 percent of total production in any one year,(the remaining 25 percent being purchased direcly by cigarette factories and a few tobacco merchants).

3. The yield per hectare having been assumed at 600 kilograms for 1965 and 750 kilograms by 1975, the land area to be planted to this crop to meet demand for Virginia leaf tobacco and its products by 1965 and 1975 is estimated at about 65,470 and 79,130 hectares respectively. This expansion, however, may not be necessary, considering that there are huge surplus stocks of Virginia leaf, which may reach approximately 80,000 metric tons by 1965. 60/

60/ At the beginning of 1961, estimated surplus stocks in warehouses were close to 50,000 metric tons.

Growth of the Virginia leaf cigarette manufacturing industry.--The domestic production of cigarettes from Virginia leaf has increased rapidly over the last 10 years:

Year	Production of Cigarettes (In Million Sticks)
1950	3,165.5
1954	10,394.4
1958	10,407.1
1959	9,764.7*

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* Preliminary figure.

At the same time, the importation of cigarettes has declined greatly since 1948:

Year	Imports of Cigarettes (In Million Sticks)
1948	11,080
1950	2,297
1952	882
1954	406
1956	88
1958	24
1960	11

However, there is a significant amount of high quality American cigarettes being smuggled into the Philippines; the exact amount is not determinable.

It is reported that cigarette factories are now operating at only 60 percent of their aggregate capacity. The total daily capacity in 1960 is estimated at 60 million cigarettes. A substantial amount of the production of these factories is cigarettes with United States brands. Due to the extreme brand consciousness of Filipino cigarette smokers, there is a marked preference for United States brands. The domestic cigarette manufacturers allowed to use these United States brands by United States manufacturers are supposed to pay royalties to the respective U.S. cigarette factories. Under this arrangement, some cigarette factories were previously allowed to import tobacco from the United States, but the price at which the tobacco was sold to them by U.S. cigarette factories was generally higher than the prevailing market price. The difference between the actual market price and the agreed upon price serves as payments of royalties to the U.S. cigarette factories.

Most cigarette factories are now selling cigarettes manufactured purely from locally grown Virginia leaf of the lower grades. The higher grades of Virginia tobacco leaf, and even some native tobacco of the cigar filler type, are used as blends or fillers to keep down cost and prices. It is believed, however, that the low quality of cigarettes produced tends to restrict demand for locally produced cigarettes. Therefore, substantial amounts of good quality U.S. cigarettes are being smuggled and sold at prices competitive with locally produced cigarettes.

By 1965, however, daily production capacity should be about 70 million cigarettes (aromatic) a day if all domestic consumption is intended to be met by domestic production. By 1975, daily production should be up to about 100 million cigarettes. It is expected that existing cigarette plant facilities will expand primarily because of relatively high profit incentives in this industry.

H. Tallow

Tallow, the solid oil or fat of oxen and sheep, is not produced in the Philippines in any significant amount. The inadequate supply of cattle and sheep in this country does not indicate any likely prospects of this commodity being produced in substantial amounts in the foreseeable future.

The Philippines therefore have been importing tallow. Records during the postwar period show the following substantial increase in the importations of tallow:

Year	Imports (Metric Tons)
1946	2.1
1947	32.1
1948	264.1
-	-
1950	1,545.4
1955	5,158.1
1960	6,544.9

The industrial demand for tallow by the soap industry.--The primary raw materials in soap manufacturing in the Philippines are oils and caustic soda. Although other oils are utilized, most soaps produced in the Philippines today contain various combinations of tallow and coconut oil. The tallow used in soap making is generally inedible tallow.

Soap-making in the Philippines is an old industry. In 1903 Census records the existence of 90 soap making establishments employing around 290 workers. Before the outbreak of World War II, 135 soap manufacturing establishments were recorded. After the war, the soap industry in the Philippines was quickly rehabilitated. By 1952, some 106 establishments were reported as producing soap while several hundred small producers were probably not included. However, while the industry has grown, only a handful of the soap-making factories use modern methods.

In 1957, there were 10 soap-making factories employing 20 or more workers each, and the total employment of these so-called large establishments exceeded 1,655 workers. The value of production sold by these establishments in the soap manufacturing industry during 1957 amounted to P66.82 million. About P42.3 million of the total production went to raw materials, containers, fuels, electricity and other production expenses. The growth in the production of soap in the Philippines is shown below:

Year	Production (Metric Tons)
1939	22,505
1951	44,330
1957	68,987

This growth in the soap-making factories was accelerated through import controls. In 1949, the importation of toilet soap was reduced to only 10 percent of the 1948 level, while imports of laundry soap were stopped.

The soap making industry, however, is almost totally in the hands of subsidiaries or branches of foreign companies of British and American soap manufacturers. Of the total soap factories now in existence, it is estimated that four factories located in Metropolitan Manila are supplying 90 percent of the total toilet soap and 75 percent of the total laundry soap used in the Philippines.

It is estimated that 30 percent of the domestic soap production is toilet soap, while 70 percent is laundry soap. The method of producing toilet and laundry soap is essentially the same, except in the finishing. In the finishing process, laundry soaps are framed and slabbed while toilet soaps are usually milled. The modern soap factories in the Philippines use the so-called full boiler process, while the many small soap-making units use the semiboiled process.

The soap industry is extremely competitive. Capital investment requirements are relatively high. Moreover, soap is a commodity with an intimate personal appeal and it requires an intricate system of distribution. In general, the margin of profit in soap manufacturing is narrow and therefore a large marketing volume is required. It is envisioned that the modern soap-making factories which are subsidiaries of foreign companies will continue to dominate the soap market in the Philippines.

The current capacity of the soap-making factories in the Philippines cannot be estimated. However, it is assumed that they can readily expand production to meet demand. Therefore, for purposes of soap supply projections, it is assumed that domestic production will be adequate to meet domestic demand in both 1965 and 1975.

In the case of tallow, the largest soap-making factory in the Philippines claims that it uses tallow for the production of toilet soap but not for laundry soap. For the latter, only coconut oil is used. In the production of toilet soap, about 30 percent by weight is made of tallow. Moreover, inroads into the laundry soap industry have been made with production of synthetic detergents, which have found a ready market in the Philippines.

Perhaps the only serious deterrent towards a rapid increase in soap production is the supply of caustic soda. Substantial amounts of this commodity are still being imported.

Tallow used for pharmaceutical and medical preparations.--The 1956 survey of manufacturers for large establishments (with 20 or more workers) reports tallow consumption by the medical and pharmaceutical products industry amounting to some 328 metric tons of edible tallow. Tallow is reportedly used as part of the oil compound base of some pharmaceutical products. No significant domestic production of tallow is expected by 1965 and 1975.

VI. PROJECTIONS OF IMPORT DEMAND: SELECTED AGRICULTURAL COMMODITIES

The projections of import demand for the selected agricultural commodities under particular study have been discussed briefly (Part III) in value terms at constant 1956 prices. It is the intention here to assess in a summary fashion import demand for the selected commodities on the basis of the following considerations: (1) to examine possible shifts in the trends of the volume and value of future imports of the selected agricultural commodities; (2) to discuss countries of origin of past imports; (3) to analyze the expected changes in the form of imports; and (4) to indicate briefly current government policies relating to imports.

A. Trade Policies and Import Patterns

Development of Philippine trade policies.--Philippine commercial relationships with centers of Asia and Oceania have been carried on since time immemorial. Before the Spaniards came, the Philippines traded regularly with China, India, Indonesia and Japan. During the Spanish regime, the Manila-Acapulco galleon trade opened European markets and, to some extent, American markets, to the Philippines.

With the American occupation, active trade with the United States began when the Manila customs house was reopened in August 1898. However, it was not until the approval of the Payne-Aldrich Tariff Act of 1909, which inaugurated preferential trade with the United States, that the trade with the United States grew rapidly. During the American regime, the Philippine economy was brought into closer commercial attachment with the United States economy. For the most part, this was accomplished with the assistance of a series of legislation: The Underwood-Simmons Act (1913), the Jones Act (1916), the Hare-Hawes-Cutting Act (1933), and the Tydings-McDuffie Act (1934). In the postwar period, the Philippine Trade Act of 1945 (Commonwealth Act No. 733) was passed, ratifying a Philippine-United States pact under which (1) the free entry of Philippine articles to the United States was extended to July 3, 1954, (2) the gradual application of ordinary customs duties began July 4, 1954, with application of full United States duty beginning January 1, 1974, and (3) absolute and duty-free quotas on certain Philippine exports were established. The Trade Treaty with the United States was revised in 1955, through the "Laurel-Langley Agreement"--a revision subsequently ratified by both countries. The new treaty, among other provisions, accelerated the period during which full ordinary customs duties collected on United States articles imported into the Philippines will have to be paid.

In 1957, an omnibus tariff and customs code (Republic Act 1937) was passed, replacing the Philippine Tariff Act of 1909. The major changes introduced included: (1) a general revision of tariff rates, with some 727 specific rates increased; 530, lowered; and 183, retained; (2) a change of the basis of classification; (3) a shift in the basis of duty assessment from FOB to CIF; (4) imposition of penalty duties for countervailing and antidumping; and (5) the adoption of a flexible tariff duty, the President having power to raise specific rates as much as five times or to lower them by one-half.

In 1955, Republic Act No. 1410 established a system of barter trade in an attempt to give (indirectly) exporters the benefit of a free market exchange rate instead of the official exchange rate of P2 to $1. The barter law was subsequently repealed in 1959, and a new barter law (Republic Act 2261) now permits barter only for specified commodities and to limited extent.

Background on import and exchange controls.--At the beginning of 1949 (January 6, 1949), Republic Act No. 330 established import controls to regulate the use of scarce foreign resources for unnecessary imports and an Import Control Board to implement the control program. During the same year, foreign exchange controls were imposed. The Central Bank, through a circular (No. 20), effected complete monopoly over all transactions in gold and foreign exchange. In 1950, all imports were subject to licensing by an Import Control Administration. In 1951, an excise tax of 17 percent was imposed on foreign exchange sold by the Central Bank. This tax was finally repealed in 1955. In its place, however, there was imposed a 17 percent special import tax on merchandise imports.

With the lapse of Republic Act No. 426 in 1953, the Central Bank assumed the functions of import control by virtue of its charter powers (Section 74 of Republic Act No. 265). Currently the Central Bank licenses imports and promulgates regulations on imports.

In 1957, the Central Bank imposed a requirement of deposits on all categories of imports. These deposits cover 50 percent to 200 percent of all imports. This requirement was relaxed in 1960, when marginal deposit requirements on certain categories of imports were lowered or removed entirely.

A law imposing a 25 percent to 40 percent margin on sales of foreign exchange was passed in 1959. The Central Bank adopted the lower limit of this range. Also, this law (Republic Act No. 2609) made mandatory a program for the decontrol of foreign exchange so that full decontrol will be reached by 1964. On April 25, 1960, the Central Bank issued regulations governing the use and sale of foreign exchange at the free market rate, implementing the first step in the program of gradual decontrol. Since then, the decontrol program has gone through three stages, and at present, the Central Bank sells dollars at the rate of P3 to $1 plus a 15 percent margin levy--or actually, P3.45 to $1. The final phase of full decontrol of foreign exchange remains to be implemented. Some believe the final phase will require complementary measures which will need to be established.

Trends of overall imports.--The Central Bank has established a statistical classification of commodities, under which imports are classified into 8 categories as follows:

1. Decontrolled items.--These include essential foods in fresh or processed form which the Philippines does not produce or the supply of which is highly inadequate. Decontrolled items, which may be imported by any qualified importer without restriction (except available foreign exchange), include milk, frozen and canned meat, sardines, flour, squid, salmon, live cattle; as well as books, journals and periodicals.

2. Essential producers' items.--The items included in this classification are enumerated by Central Bank circulars, and cover products imported as basic raw materials or intermediate products. Essential producers' items include petroleum and motor gasoline, fertilizers, steel bars and rods, machinery and machinery parts, scientific equipment, and knocked-down motor vehicles.

3. Semiessential producers' items.--These include raw materials and intermediate products which are not considered basic, such as fish meal, plant seeds, steel tanks, accounting machines, and commercial refrigerators.

4. Nonessential producers' items.--These include sausage casings, coffee, cigarette making machines and cameras.

5. Essential consumer items.--These include vaccines and antibiotic compounds not included in the list of decontrolled items, and embroidery threads.

6. Semiessential consumer items.--These include cake flour and prepared flour mixes, nursing bottles, and ball pens.

7. Nonessential consumer items.--These include luxury items such as jewelry, perfumes and lotions, and toys.

8. Unclassified items.--These include foods that can be produced in the Philippines (for instance, bacon, ham, sausages, shrimp, bakery products, and fruits and vegetables), trinkets and novelties, imitation jewelry, readymade clothes, works of art, and a host of other products which are not necessary to daily living.

Through time, the classification of a particular product or products is changed from one category to another. Thus, cotton yarn for thread manufacture has been reclassified in 1961 from essential producers' item to unclassified item; leather footwear (with rubber soles) from nonessential consumer items to unclassified items, and so forth. Reclassification is generally based on justifications or briefs submitted by domestic manufacturers of various products to the Central Bank.

Through the years, there has been a gradual shift in the import pattern from consumer goods to producer goods, as follows:

Import Commodity Type	Percent of Total Merchandise Imports						
	1954	1955	1956	1957	1958	1959	1960
1. Essential Producers	40.23	46.51	54.76	52.02	50.43	61.29	59.35
2. Semiessential Producers	16.53	11.55	12.14	12.18	12.41	11.89	10.20
3. Nonessential Producers	7.92	8.41	6.81	6.93	4.91	3.74	4.80
4. Essential Consumers	2.10	3.95	2.52	3.43	4.92	1.10	1.98
5. Semiessential Consumers	1.12	0.71	0.49	0.68	0.48	0.63	0.43
6. Nonessential Consumers	6.80	5.31	3.25	3.54	0.83	1.10	1.29
7. Decontrolled Items	12.68	14.01	14.37	13.19	18.91	13.13	15.26
8. Unclassified Items	12.62	9.54	5.66	8.03	7.11	7.12	6.69
Imports: Total Merchandise (In Million U.S. Dollars)	502.49	570.20	537.33	658.10	521.60	530.36	508.50

B. Overall Trends and Projections of the Selected Agricultural Commodities

From 1946 to 1960, the imports of the eight selected agricultural commodities have accounted for more than 17 percent of the Philippine agricultural imports, and for about 15 percent of all merchandise imports.

The rather steady ratio of total imports for the selected commodities to total agricultural and/or total merchandise imports during the postwar period does not hold for the commodities individually. While there has been a steady decline in imports of tobacco leaf and wheat flour--and erratic trends for rice and corn imports--the imports of meat products, dairy products, raw cotton, and tallow have increased on the whole (Table VI-1).

Table VI-1. -- Value of Imports of Selected Agricultural Commodities In Relation to Total Value of Agricultural and of Total Merchandise Imports, 1940, 1946-1960

(F.O.B. in Thousand Pesos; $1=P2)

Year	Milled Rice	Shelled Corn	Wheat Flour	Meat Products (Excl. Livestock)	Dairy Products	Raw Cotton	Tobacco Leaf	Tallow	Agricultural Imports	Total Merchandise Imported
A. F.O.B. Value in Thousand Pesos;										
1940	2,451	2	9,692	2,757	9,286	579	14,756	-	60,035	n. a.
1946	49,877	4	29,107	3,544	21,424	454	29,649	-	219,207	n. a.
1947	58,263	800	52,136	10,437	42,625	2,480	43,962	-	289,354	n. a.
1948	45,826	523	58,953	14,304	45,825	4	49,391	164	310,474	n. a.
1949	51,704	1,663	58,241	13,701	46,834	1,361	35,491	116	288,831	1,346,000
1950	1,333	1,281	40,611	3,659	36,840	3,493	23,136	480	164,855	781,200
1951	32,719	98	49,147	10,052	49,660	-	17,246	3,238	232,036	1,041,800
1952	23,047	15	43,108	4,763	43,108	2,213	33,166	1,006	187,976	886,120
1953	a/	11	57,300	6,750	45,736	4,724	27,655	1,193	175,264	978,360
1954	8,312	5	41,315	13,317	46,028	2,251	19,159	1,970	179,492	1,004,980
1955	12,823	4	53,840	14,848	54,367	3,948	28,659	1,829	223,928	1,140,400
1956	6,976	3	47,203	17,116	53,054	7,148	10,518	2,210	194,833	1,074,700
1957	14,014	1,969	37,514	16,585	65,447	11,177	1,446	2,081	236,466	1,316,200
1958	41,494	2,128	38,932	19,837	52,442	16,813	5,490	2,134	251,360	1,043,200
1959	1,718		26,477	11,372	37,252	28,402	232	2,224	164,579	1,060,720
1960	a/	a/	27,979	-	49,649	34,151	910	1,915	n. a.	1,017,000

Table VI-1. -- Value of Imports of Selected Agricultural Commodities In Relation to Total Value of Agricultural and of Total Merchandise Imports. 1940, 1946-1960 (continued)

(F.O.B. in Thousand Pesos; $1 = P2)

Year	Milled Rice	Shelled Corn	Wheat Flour	Meat Products (Excl. Livestock)	Dairy Products	Raw Cotton	Tobacco Leaf	Tallow	Agricultural Imports	Total Merchandise Imported
B. Percent to Agricultural Imports										
1940	4.08	*	16.14	4.59	15.47	0.96	24.58	-	65.82	-
1946	22.75	*	13.28	1.62	9.77	0.21	13.52	-	61.15	-
1947	20.13	0.28	18.02	3.61	14.73	0.86	15.19	-	72.82	-
1948	14.76	0.17	18.99	4.61	14.76	*	15.91	0.05	69.25	-
1949	17.90	0.57	20.16	4.74	16.21	0.47	12.29	0.04	72.38	-
1950	0.81	0.78	24.63	2.22	22.35	2.12	14.03	0.29	67.23	-
1951	14.10	0.04	21.18	4.33	21.40	-	7.43	1.39	69.87	-
1952	12.26	0.01	22.93	2.53	18.65	1.18	17.64	0.53	75.73	-
1953	-	0.01	32.69	3.85	26.09	2.89	15.78	0.68	81.99	-
1954	4.63	*	23.02	7.42	25.64	1.25	10.67	1.10	73.73	-
1955	5.73	*	24.04	7.08	24.28	1.76	12.80	0.82	76.51	-
1956	3.58	*	24.23	8.78	27.23	3.67	5.40	1.13	74.02	-
1957	5.93	0.65	15.86	7.01	27.68	4.73	0.61	0.88	63.53	-
1958	16.51	0.85	15.49	7.89	20.86	6.69	2.18	0.85	71.32	-
1959	1.04	*	16.09	6.91	22.63	17.26	0.14	1.35	65.42	-
1960	*	-	-	-	n. a.	-	-	-	-	-

Table VI-1. -- Value of Imports of Selected Agricultural Commodities In Relation to Total Value of Agricultural and of Total Merchandise Imports. 1940, 1946-1960 (continued)

(F.O.B. in Thousand Pesos; $1=P2)

Year	Milled Rice	Shelled Corn	Wheat Flour	Meat Products (Excl. Livestock)	Dairy Products	Raw Cotton	Tobacco Leaf	Tallow	Agricultural Imports	Total Merchandise Imported
C. Percent to Total Merchandise Imports										
1940					n. a.					
1946					n. a.					
1947					n. a.					
1948					n. a.					
1949	3.84	0.12	4.33	1.02	3.48	0.10	2.64	0.01	-	15.54
1950	0.17	0.16	5.20	0.47	4.71	0.45	2.96	0.06	-	14.18
1951	3.14	0.01	4.72	0.96	4.77	-	1.65	0.31	-	15.56
1952	2.60	*	4.86	0.54	3.96	0.25	3.74	0.11	-	16.06
1953	-	*	5.86	0.69	4.67	0.48	2.83	0.12	-	14.65
1954	0.83	*	4.11	1.32	4.58	0.22	1.91	0.20	-	13.17
1955	1.12	*	4.72	1.39	4.77	0.35	2.51	0.16	-	15.02
1956	0.65	*	4.39	1.59	4.94	0.66	0.98	0.20	-	13.41
1957	1.06	0.15	2.85	1.26	4.97	0.85	0.11	0.16	-	11.41
1958	3.98	0.20	3.73	1.90	5.03	1.61	0.53	0.20	-	17.18
1959	0.16	-	2.50	1.07	3.51	2.68	0.02	0.21	-	10.15
1960	*	*	2.75	-	4.88	3.36	0.09	0.19	-	11.27

*Less than 0.01 percent.

a/ Less than 1,000 pesos.

Taken as a group, the imports of the selected agricultural commodities are expected to increase significantly by 1965 and 1975, but will likely constitute a somewhat stable proportion of total merchandise imports, as follows:

Year	Imports of the Selected Agricultural Commodities**	Total Merchandise Imports	Percent of Selected Commodities to Total Merchandise Imports
	(F.O.B., in Million Pesos)		
1956	144.23	1,074.70	13.42
1965*	201.50	1,171.24	17.20
1975*	226.89	1,485.00	15.28

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*In 1956 prices.

**Includes livestock (on-the-hoof), cigarettes, and cotton fabrics (bleached and unbleached).

In terms of the import commodity classification, each of the selected agricultural commodities under particular study are classified as follows:

Commodity	Central Bank Statistical Classification of Commodity, June 30, 1960
1. Rice	
In husk	Unclassified
Glutinous	Unclassified
Nonglutinous	Unclassified
2. Corn	
Unmilled	Unclassified
Milled (Flour)	Unclassified
3. Meat and Meat Products	
Live cattle	Decontrolled
Fresh meat of bovine cattle	Decontrolled
Corned beef	Decontrolled
Hides	Essential Producers' Item
Sausage, casings, artificial and natural	Nonessential Producers' Item
Egg yolk, albumen and powder	Nonessential Producers' Item
Meat of sheep and lamb	Nonessential Consumers' Item
Sheep and lambs	Unclassified
Swine, poultry and other live animals	Unclassified
Meat of swine, entrails and offals	Unclassified
Bacon, ham, fresh eggs	Unclassified

(continued)

Commodity	Central Bank Statistical Classification of Commodity, June 30, 1960
4. Dairy Products	
Full cream evaporated milk, condensed sweetened milk, sterilized natural milk	Decontrolled
Powdered milk for human consumption, skimmed milk and dietetic malted milk	Decontrolled
Ice cream mix and powder	Nonessential Producers' Item
Skimmed evaporated and condensed milk	Semiessential Consumers' Item
Other malted milk, n.e.s.	Semiessential Consumers' Item
Butter and cheese	Nonessential Consumers' Item
Fresh milk and cream: buttermilk, sour cream	Unclassified
5. Wheat and Wheat Flour	
Wheat and spelt, unmilled	Essential Producers' Item
Semolina and Durum wheat flour (may be imported by manufacturers of macaroni, spaghetti and vermicelli only).	Essential Producers' Item
Enriched wheat flour for baking purposes	Decontrolled
6. Cotton and Cotton Products	
Raw cotton, cotton linters, cotton fibers (carded or combed)	Essential Producers' Item
Cotton yarn, (unbleached, not mercerized) for thread manufacture	Essential Producers' Item
Cotton duck and organdy	Nonessential Producers' Item
Cotton thread (unbleached, not mercerized)	Unclassified
Readymade wearing apparel	Nonessential Consumers' Item
Cotton yarn (except weaving yarn, unbleached, unmercerized)	Nonessential Consumers' Item
Cotton fabrics, unbleached: grey cotton and sheeting	Nonessential Consumers' Item
Cotton fabrics for embroidery	Nonessential Consumers' Item
Cotton remnants, seconds	Nonessential Consumers' Item
Cotton felt or pads for mattresses and seats	Nonessential Consumers' Item

(continued)

Commodity	Central Bank Statistical Classification of Commodity, June 30, 1960
7. Tobacco	
Leaf tobacco, except wrappers	Nonessential Producers' Item
Tobacco scraps and stems	Unclassified
Cigars, cheroots, smoking pipe tobacco, etc.	Unclassified
Leaf tobacco wrapper	Semiessential Producers' Item
8. Tallow	
Animal, inedible	Essential Producers' Item

C. Importations Under the United States Surplus Agricultural Commodities Program

Fairly substantial amounts of nonfat dry milk (powdered skimmed milk), cotton, rice, corn, and inedible tallow have been imported into the Philippines under the United States Surplus Agricultural Commodities Disposal Program. Available data from 1955 to 1959 indicate that some $79,948,500 (including $700,000 of rawhide) of such United States surplus commodities have been imported, as follows:

Commodity	Total Imports 1955 to 1959 (Thousand U.S. Dollars)	Percent Distribution
1. Nonfat dry milk		
a. Under the Mutual Security Act	$ 39,796.5	50.7
b. Under P.L. 480	1,125.0	1.4
Total	40,921.5	52.1
2. Raw Cotton		
a. Under the Mutual Security Act	24,002.0	30.6
b. Under P.L. 480	4,900.0	6.2
Total	28,902.0	36.8
3. Corn, under the Mutual Security Act	1,050.0	1.3
4. Meat, Under P.L. 480	500.0	0.6
5. Milled Rice, Under P.L. 480	6,600.0	8.4
6. Inedible tallow, under P.L. 480	500.0	0.6
Total	78,473.5	100.0
7. Rawhide	700.0	-
8. Others (ocean transport)	775.0	-
Grand Total	$ 79,948.5	-

The imports for the same period under Section 402 of the Mutual Security Act and under P.L. 480 have been utilized as follows:

Utilization	Amount (In Thousand U.S. Dollars)	Percentage Distribution
1. Public Law 480	$ 14,400.0	18.0
U.S. Government Expenditures	4,250.0	5.3
Common Defense Purposes	3,100.0	3.9
Loans: Philippine Government	5,200.0	6.5
Ex-IM Bank	1,000.0	1.3
Assistance Under Sec. 104 (g)*	850.0	1.0
2. Section 402	$ 65,548.5	82.0
Industrial Loans	16,700.0	20.9
Military Construction	38,848.5	48.6
Community Development	10,000.0	12.5
Total	$ 79,948.5	100.0

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*Loans to promote multilateral trade and economic development, made through established banking facilities of the friendly nation from which foreign currency was obtained. Strategic materials, services, or foreign currencies may be accepted in payment of such loans.

In 1960, there were also imports of raw cotton under Section 402 of the Mutual Security Act.

The importations under Public Law 480 were mostly under Title I of that law. However, in 1957, there were some imports under Title III, made through the Associated Charities in the Philippines, which include such items as nonfat dry milk and breakfast rice.

The program of the National Economic Council (which coordinates the foreign aid program of this country) envisions continuation of importations of various commodities under Section 402 of the Mutual Security Act. There were no importations in 1960 under Public Law 480, but current negotiations covering fiscal year 1961-1962 include importations, under this law, of some 18 months supply of raw cotton for the domestic cotton textile mills. It is reported, however, that importations of skimmed milk under either program may be terminated in 1961, in view of objections of United States manufacturers of canned whole milk arising from the local competition offered by filled milk production (which utilizes the powdered skimmed milk).

D. Projections of Import Demand for Selected Individual Commodities

1. Rice

Form of the imported commodity.--Rice is imported in the form of milled rice, usually sacked in jute bags. Rice imported from the United States is contained in 100-pound sacks. That imported from other countries is often contained in varying sack sizes, although bid specifications generally call for sacks containing 56 kilograms of rice each.

Volume and value of imports.--The Philippines has remained an almost perennial importer of rice since 1903. At one time, however, rice was an export commodity shipped abroad through the port of Sual, Pangasinan, when the port was opened in 1855.

Imports of rice for selected years since 1903 have been as follows:

Year	Net Imports (Thousand cavans of 56 kgs., net)
1903	5,970
1910	3,524
1920	309
1931	207
1940	681
1950	0
1960	0
1961	1,700*

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*Authorized by the President of the Philippines. Further imports during this year are proposed.

In terms of total available supply for food, importations of rice appeared to fluctuate severely from year to year. During the last 10 years (1950 to 1960) they reached the peak of 4.12 million cavans in 1958. During 1960, however, there were no importations (Table VI-2). The rather erratic trends of domestic rice production, and of imports, point to the uncertainty of the large imports except during unusual years.

Table VI-2.--Total Available Supply of Rice for Food, 1903-1960

(Thousand Cavans of 56 Kilos)

Crop Year	Domestic Production Available for Food	Net Imports	Total Available Supply for Food
1903	5,440	5,970	11,410
1910	8,948	3,524	12,472
1911	9,741	3,280	13,021
1912	5,515	5,376	10,891
1913	11,624	1,533	13,157
1914	10,789	1,730	12,518
1915	8,455	3,900	12,355
1916	9,907	3,389	13,296
1917	13,417	2,619	16,036
1918	16,984	3,275	20,259
1919	16,029	907	16,936
1920	17,245	309	17,554
1921	19,681	1,059	20,740
1922	20,610	748	21,358
1923	20,778	1,175	21,953
1924	19,725	2,694	22,419
1925	21,662	1,802	23,464
1926	22,671	1,249	23,920
1927	23,485	203	23,688
1928	23,687	765	24,452
1929	23,623	1,873	25,496
1930	24,477	188	24,665
1931	23,534	207	23,761
1932	22,439	230	22,669
1933	22,701	348	23,049
1934	25,148	21	25,169
1935	21,743	83	21,826
1936	20,033	1,627	21,660
1937	26,104	1,285	27,389
1938	24,837	162	24,999
1939	24,765	1,519	26,284
1940	25,489	681	26,161
1941	25,684	189	25,873
1942	26,331	-	26,331
1946	17,506	2,667	20,173
1947	22,519	1,480	23,999
1948	24,165	1,726	25,891
1949	26,866	2,421	29,287
1950	28,103	-	28,103

(continued)

Table VI-2.--Total Available Supply of Rice for Food, 1903-1960 (Continued)

(Thousand Cavans of 56 Kilos)

Crop Year	Domestic Production Available for Food	Net Imports	Total Available Supply for Food
1951	28,215	2,319	30,534
1952	30,526	1,127	31,653
1953	33,906	a/	33,906
1954	34,319	761	35,080
1955	34,620	1,134	35,754
1956	35,248	757	36,005
1957	36,850	1,391	38,241
1958	33,857	4,119	37,976
1959	39,732	116	39,840
1960	39,692	none	39,692

a/ 15.6 cavans only.

Sources: (1) Agricultural Production: Agricultural Economics Division, Department of Agriculture and Natural Resources, Quezon City; and

(2) Net Imports: Bureau of the Census and Statistics, Manila.

Sources of imports.--During 1951 to 1959, the Philippines has imported milled rice from at least 14 countries throughout the world. More than half of the rice imports during 1949 to 1959, however, have come from Thailand. During the same period, imports from the United States amounted to approximately 20 percent of the total rice imports (Table VI-3).

Table VI-3. -- Rice Imports By Country of Origin, 1951-1959

(In Metric Tons)

Source	1951	1952	1953	1954	1955	1956	1957	1958	1959
United States	36.2	3,250.8	0.1	3.6	1,104.7	1,370.4	1,930.0	48,896.5	6,501.7
China	1.7	-	-	-	-	-	-	-	-
French East Indies	-	-	-	-	-	-	-	-	-
Burma	-	29,922.3	-	-	11,937.3	-	-	5,200.0	-
Japan	-	0.3	0.4	0.6	-	-	-	-	-
Hong Kong	0.2	-	0.2	0.4	0.06	-	3.2	-	-
Thailand	129,811.2	29,949.1	0.2	15,000.0	50,475.5	24,670.8	62,821.0	131,323.0	-
Portugal	-	-	-	-	-	16,359.8	-	-	-
Switzerland	-	-	-	-	0.01	-	-	-	-
Pakistan	-	-	-	27,624.4	-	-	-	-	-
Cambodia	-	-	-	-	-	-	5,400.0	12,609.5	-
South Vietnam	-	-	-	-	-	-	2,500.0	32,639.2	-
South Borneo	-	-	-	-	-	-	-	0.5	-
Spain	-	-	-	-	-	-	6,150.0	-	-
Total (Metric Tons)	129,849.3	63,122.5	0.9	42,629.0	63,517.6	42,401.0	78,804.2	230,668.7	6,501.7
Total (Cavans of 56 kgs.)	2,318,738	1,127,188	16	761,232	1,134,241	757,161	1,407,219	4,119,082	116,102

With respect to the Thailand rice market, there are three main methods of importing Thailand rice: (a) on a government-to-government basis, (b) through public bidding, and (c) through negotiation. The government-to-government purchase is negotiated between the government of Thailand and the governments of importing countries. Lately, the Thailand government has declared a policy that rice trading in Bangkok should be left to the trading enterprise. Therefore, government-to-government purchasing of rice is not usually favored at the present time. The NARIC, the government agency previously authorized to import rice, has purchased Thailand rice through the second method, that is, by public bidding in the Bangkok market. With respect to the third method of purchasing rice through public negotiation, the purchaser is at liberty to choose the trading party with whom to deal.

Most Philippine imports of Thailand rice consist of so-called white rice broken, of the A-1 super variety. While this variety is considerably below the qualities of Philippine varieties, the NARIC often mixes this Thailand variety with locally produced rice and sells the mixture at prices below that of domestically-produced rice.

With respect to the Burma rice market, importers of rice have to deal directly or indirectly with the Burma State Agricultural Marketing Board. This Board is the government entity charged with selling rice to other nations on government basis or directly to exporters on a tender basis. While Burma is the world s leading exporter of rice, Philippine rice imports from Burma have been considerably less then imports from Thailand.

Imports of rice from the United States have been undertaken under Public Law 480 in both 1957 and 1958. American rice is comparable with the so-called fancy variety of Philippine rice. On occasion it has been mixed with fancy varieties and sold at prices comparable with high quality native rice. Rice imports for 1957 and 1958 amounted to $2.5 million and $4.1 million respectively.

Rice imports by country of origin (Table VI-3) indicate importations from such distant places as Spain (1957), Portugal (1956), and Pakistan (1954). Total imports from 1951 to 1959 have reached close to 657,000 metric tons, or an average importation of 73,000 metric tons yearly. In 1961 imports of 77,000 metric tons from Thailand and Burma were short of the authorized 100,000 metric tons due to government rice export restrictions imposed in those countries. However, the balance of the negotiated exports to the Philippines are expected to be released. An additional 100,000 metric tons are scheduled to be imported during the balance of 1961. Some imports will come from the United States (20,000 metric tons at $133 per metric ton). Egypt (10,000 metric tons at $124.46 per metric ton), and Spain (10,000 metric tons at $119.50 per metric ton).

Government policy on imports.--The importation of rice is usually handled by the government, through the National Rice and Corn Corporation (NARIC). Established in 1946, NARIC has among its main objectives: (1) the development of the rice industry; (2) the procurement of stabilization stocks of rough rice (palay) at floor prices established through Executive Orders of the President of the Philippines; and (3) the sale of milled rice at a maximum price. It has been the practive, however, for the NARIC to import rice for stabilization purposes. It should be noted that Dr. John D. Black has warned against this practice except in very unusual circumstances. 61/ Rice importation has

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61/ Memorandum of John D. Black to the Philippine Government entitled Philippine Palay and Rice Policy Program, dated December 1, 1954.

been undertaken on the basis of the preferred rate of exchange at P2 to $1, thus insuring a relatively low price for imported rice.

During 1959, Republic Act No. 2207 was passed, prohibiting the importation of rice and corn except when an imminent or existing shortage in the local supply of rice is of such magnitude as to constitute a national emergency, as certified true by the National Economic Council. In this event, the President of the Philippines may authorize the importation of rice or corn through any agency that he may designate and in such quantities as the NEC may determine necessary to cover the shortage. However, rice imports are now subject to the taxes, duties and/or special charges provided by law, whereas previously importation by the NARIC was exempt from such taxes and duties. For the year 1961, a rice shortage amounting to 100,000 metric tons has been certified by the National Economic Council.

Projections of imports.--Despite rather heavy imports during 1961, no rice imports are projected for 1965 and 1975. The import projections imply the absence of unusual floods and typhoons which would wipe out stock additions and small stockpiles of rice. Stock additions in 1965 and 1975 constitute less than 1 percent of total production of either rough rice or milled rice. Yearly stock additions in the periods preceding 1965 and intermediate to 1975 will be of the same small magnitude.

2. Corn

Form of the imported commodity.--Although small quantities of milled corn and corn flour have been imported, corn imports usually are in the form of shelled corn contained in jute bags.

Volume and value of imports.--Importation of corn is a relatively new phenomenon. Corn import data are available only from 1940 when 188 cavans (57 kilograms per cavan) were imported. As in rice, there are severe fluctuations in the volume of corn imports as shown in Table VI-4.

Sources of corn imports and government policy on imports.--Since 1946, about 57 percent of corn imports has been from the United States and 41 percent from British Africa (only for 1958, see Table VI-5).

The government policy relative to corn imports is identical to that for rice, and is governed by the same legislation (Republic Act No. 2207).

Projections of imports.--On the basis of the sector balances, the Philippines is expected to be self-sufficient in corn by 1965 and continue as such to 1975.

Table VI-4.--Total Available Supply of Shelled Corn. 1935-1960

(Thousand Cavans of 57 Kilograms)

Crop Year	Domestic Production	Net Imports	Total Available Supply	Imports as percentage of Total Available Supply
1935	5,185	—	5,185	—
1936	6,371	—	6,371	—
1937	7,678	—	7,678	—
1938	8,782	—	8,782	—
1939	8,055	—	8,055	—
1940	10,038	.188	10,038.2	*
1946	5,812	.177	5,812.2	*
1947	8,284	55.919	8,339.9	0.7
1948	9,105	20.672	9,125.7	0.2
1949	9,370	139.230	9,509.7	1.5
1950	10,066	116.254	10,182.3	1.1
1951	10,582	8.046	10,590.0	0.1
1952	13,366	.527	13,366.5	*
1953	12,447	.037	12,447.0	*
1954	13,700	.274	13,700.3	*
1955	13,511	(2.792)	13,508.2	(0.02)
1956	15,919	.589	15,919.6	*
1957	15,708	185.479	15,893.5	1.2
1958	14,949	353,460	15,302.5	2.3
1959	17,823	(1,344.218)	16,478.8	(8.2)
1960	20,444	(185.077)	20,259.0	(0.9)

*Negligible.

Sources of Basic Data: Philippine Agricultural Statistics, Vol. I, 1954 (DANR), Bureau of the Census and Statistics.

Table VI-5. -- Corn: Quantity and Value of Imports of Shelled Corn, By Country of Origin, 1946-1960

(Quantity in Kilograms; Value in Pesos)

Year	Total		British Africa		United States		Hong Kong		Canada		China	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1946	10,080	4,028	-	-	10,080	4,028	-	-	-	-	-	-
1947	3,187,363	800,254	-	-	3,187,363	800,254	-	-	-	-	-	-
1948	1,178,293	522,998	-	-	1,129,189	517,900	-	-	-	-	49,104	5,098
1949	7,964,589	1,662,560	-	-	6,895,265	1,490,380	-	-	33,710	12,324	1,035,614	159,856
1950	6,626,499	1,281,546	-	-	6,626,499	1,281,546	-	-	-	-	-	-
1951	458,636	97,780	-	-	458,636	97,780	-	-	-	-	-	-
1952	30,033	14,764	-	-	30,033	14,764	-	-	-	-	-	-
1953a/	10,999	10,758	-	-	10,999	10,758	-	-	-	-	-	-
1954	15,604	4,808	-	-	14,634	4,448	970	360	-	-	-	-
1955a/	8,814	4,062	-	-	8,814	4,062	-	-	-	-	-	-
1956	36,549	3,100	-	-	36,549	3,100	-	-	-	-	-	-
1957	10,748,412	1,968,584	-	-	10,748,412	1,968,584	-	-	-	-	-	-
1958	20,821,200	2,128,385	20,821,200	2,128,385	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-
1960	907	373	-	-	907	373	-	-	-	-	-	-

a/ Includes some imports of milled corn.

Source of Basic Data: Bureau of the Census and Statistics.

3. Wheat

Form of the imported commodities.--Imports of wheat in the postwar years have been largely in the form of flour. However, when grain imports started during 1958, some 8,600 metric tons of wheat grain were imported. The significant imports of wheat grain which began in 1958, reached some 11,500 thousand metric tons in 1960 (Table VI-6).

	Percent Distribution of Wheat Imports*		
Year	Wheat Grain	Wheat Flour	Vermicelli and others
1946	0	99.2	0.8
1950	**	99.3	0.7
1955	**	99.1	0.9
1956	0	99.8	0.2
1957	-	99.9	0.1
1958	2.0	97.9	0.1
1959	29.0	70.7	0.3
1960	33.8	66.2	**

N.B. The recovery rate per kilogram of wheat grain is 72 percent.
* Wheat flour equivalent.
** Less than 1 percent.

Table VI-6.--Total Supply of Flour, 1946-1960

(Kilograms)

Year	Wheat Grain 1/	Net Imports*: Flour	Net Imports*: Vermicelli Macaroni, etc. 2/	Total Flour Supply
1946	—	125,121,847	955,596	126,067,443
1947	—	155,710,596	2,375,741	158,086,337
1948	56	165,417,636	3,800,489	169,218,131
1949	99,210	192,502,219	3,345,913	195,947,342
1950	47	176,556,013	1,260,891	177,816,951
1951	8	216,133,661	1,522,324	217,655,993
1952	37,037	195,974,246	1,318,871	197,330,154
1953	—	166,985,779	1,610,756	168,596,535
1954	—	187,744,528	1,752,086	189,496,614
1956	16,335	244,729,531	2,305,113	247,050,979
1956	—	215,100,536	499,719	215,600,255
1957	—	286,615,948	378,690	286,994,638
1958	6,207,980	299,479,110	196,435	305,883,525
1959	57,313,900	139,542,268	547,849	197,404,017
1960	82,656,000	161,766,902	54,028	244,476,930

*These figures are net imports, i.e., total imports less exports and re-exports. No local production of wheat products is shown since the raw material used is also imported flour.

Conversion factors:

1/Wheat to flour, 0.72.

2/Macaroni products to flour, 1.00.

Source of Basic Data: Bureau of the Census and Statistics.

Sources of wheat and wheat flour imports.--Canada and the United States supplied practically all the wheat flour exported into the Philippines since 1953, except in 1960 when several countries shared about 13 percent of total wheat flour imports (Table VI-7). Wheat grain is likewise imported mainly from the United States and Canada.

Table VI-7.--Percentage Distribution of Wheat and Flour Imports by Country of Origin, 1953-1960

(In terms of quantity)

Year	Wheat Grain			Wheat Flour		
	U.S.	Canada	All Others	U.S.	Canada	All Others
1953	-	-	-	44.5	55.4	a/
1954	-	-	-	42.7	56.7	a/
1955	100.0	-	-	44.8	53.4	1.8
1956	-	-	-	45.9	50.2	3.9
1957	-	-	-	52.1	39.2	8.7
1958	100.0	-	-	66.8	30.5	2.7
1959	26.7	55.7	17.6	55.9	40.4	3.7
1960	74.9	17.2	7.9	35.0	51.6	13.4

a/ Means less than 1 percent.

Other countries are (in descending order): Australia, Japan, Netherlands, India, United Arab Republic and several others.

Source of Basic Data: Bureau of the Census and Statistics.

The Philippines and the international wheat agreement of 1959.--The Philippines is a signatory to the International Wheat Agreement of 1959, which expires July 31, 1962. As an importing country, the Philippines is obliged to purchase 70 percent of its total commercial wheat requirements for a given crop year from any one of the following exporting countries: Argentina, Australia, Canada, France, Italy, Mexico, Spain, Sweden, United States of America - at prices within a minimum and maximum price range of $150 to $190 (Canadian currency) per bushel.

Under the terms of the Agreement, the Philippines shall notify the International Wheat Council of its provisional estimate of its commercial requirements of wheat from exporting countries by September 15 of each crop year (covering August of the preceding year to July of the current year). Before December 31 of each year, the Philippines shall notify the Council of any changes in this provisional estimate. The Philippines is allowed to fulfill its obligations under this Agreement through private channels or otherwise. But when any difficulty is encountered, relative to dollar reserves, balance of entitlement and price quotations, the Council can be approached for help on effecting any amendment to the Agreement. Table VI-6 delineates Philippine imports.

As an importing country, the Philippines is given a voting power of 22 votes. This is based on the Philippine percentage of the total wheat trade under the auspices of the Wheat Agreement. 62/ Obligations regarding the amount or quantity which the Philippines should import depend on the "datum quantities" which are computed as the average annual commercial purchases the Philippines makes from exporting countries or from a particular exporting country. 63/

4. Meat and Meat Products

Form of meat imports.--Meat has been imported into the Philippines in various forms: (1) on-the-hoof; (2) fresh, chilled or frozen; (3) canned; and (4) dried, smoked, cured, or pickled.

The bulk of the imports--about 80 percent during the period 1955 to 1958--are canned meat. The demand for canned meat is high due to the following basic market situations: (1) most households, particularly in rural areas, are not equipped with refrigerators to keep fresh meat in good condition even for a few days; and (2) refrigerated cars for transporting perishables from slaughter houses to consumption centers are extremely few and expensive to maintain.

During the postwar period, most imports of fresh and canned meat were beef and pork. Poultry constituted only a slight proportion of the total imports of these forms of meat products. With respect to cured meat (or smoked, dried, pickled), there has been a rapid decrease in the imports of pork in favor of beef and other meat and meat products (mutton, liver, etc.)(Table VI-8).

62/ All signatories of this Agreement, both exporting and importing countries, are given voting power the number of which is in proportion to the country's estimated participation in the trade within the system; e.g., Canada and United States, the biggest exporters, both have 339 votes out of a total of 1,000. These votes do not in any way represent the exact amount or percentage which any importing country is obliged to purchase from them.

63/ For the first crop year of this Agreement, average is based on the first 4 of the immediately preceding 5 crop years and, for each succeeding crop year, on the first 5 of the immediately preceding 6 crop years.

Table VI-8. --Quantity of Meat and Meat Products Imported by Kind, Philippines, 1955-58

(Kilograms)

Kind	1955	1956	1957	1958
Fresh, Chilled or Frozen	3,729,516	5,441,258	4,577,672	3,823,568
Beef	3,179,672	5,003,485	3,867,629	3,582,277
Pork	20,290	6,513	1,183	840
Poultry	19,645	13,143	24,747	1,219
Others[a]	509,909	418,117	684,113	239,232
Canned	10,042,113	12,271,094	11,931,212	16,507,326
Beef	5,230,405	7,413,345	8,456,354	14,442,608
Pork	246,267	25,411	50,515	239
Poultry	502	43,303	32,275	–
Others[b]	4,564,939	4,789,035	3,392,068	2,064,479
Dried, Smoked, Cured and Pickled	123,234	83,627	73,675	58,440
Beef	240	510	975	21,744
Pork	101,638	75,657	50,733	6,654
Poultry	497	553	460	648
Others[c]	20,859	6,907	21,507	29,394
Total	13,894,863	17,795,979	16,582,559	20,389,334

[a] Includes mutton and lamb, liver, kidney, tongues, etc.

[b] Includes meat pastes and spreads (with both beef and pork contents), sausage casings, other canned meat.

[c] Includes bolognas and frankfurters, sausages, other meat.

Source of Basic Data: Foreign Trade and Navigation of the Philippines
Bureau of the Census and Statistics.

The distribution of meat and meat products by form and type during the period 1955-1958 is as follows:

Form and Type of Meat Products	Percent to Total Imports In Terms of Kilograms	
Fresh, Chilled or Frozen		25.62
Beef	22.80	
Pork	0.04	
Poultry	0.08	
Others	2.70	
Canned		73.90
Beef	51.72	
Pork	0.47	
Poultry	0.11	
Others	21.60	
Dried, Smoked, Cured		0.48
Beef	0.03	
Pork	0.34	
Poultry	0.00	
Others	0.11	
	Total	100.00

Compared with the prewar period, there has been a shift in the type of meat imported from pork to beef. For instance, in 1940, canned pork products accounted for 23 percent of total meat imports, while beef accounted for 39 percent. In 1958, canned beef imports were more than seven times the quantity of canned pork products.

With respect to canned beef, about 63 percent of this form and type of meat product has been actually canned corned beef (the percentage being an average for the period 1955 to 1959).

Volume and value of imports.--Generally speaking, imports of meat, except live animals for food, have increased yearly during the postwar period. However, the trend is somewhat erratic from 1956. Imports of live animals for food (Table VI-9) reached a peak of 15,259 head of bovine cattle and buffalo in 1957, and since then declined to 2,156 head in 1960.

Table VI-9.--Importation of Livestock and Poultry for Food, 1955-1959

(F.O.B. Value in Pesos)

Livestock and Poultry	1955		1956		1957		1958		1959	
	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value
Livestock:										
Bovine cattle and buffaloe	7,124	2,271,256	5,836	1,382,156	15,259	4,075,758	7,339	1,988,719	4,027	464,312
Sheep and lamb	–	–	5	160	–	–	–	–	–	–
Poultry:										
Chickens and turkey	4,535	15,254	17	154	–	–	–	–	–	–
Other poultry and game	1,389	4,334	134	626	–	–	–	–	50	40
Other live animals n. e. s.	–	–	1,732	75,022	194	612	–	–	–	–
Total	13,048	2,290,844	7,724	1,458,118	15,453	4,076,370	7,339	1,988,719	4,077	464,352

Source of Basic Data: Bureau of the Census and Statistics.

In value terms, imports of meat and meat products for two selected periods, 1955 and 1960, have been as follows:

Kind	1955	1960
	(F.O.B. In Thousand Pesos)	
Fresh, Chilled/Frozen	3,557.6	1,189.8
Canned	12,064.9	11,063.0
Dried, Smoked, Cured/Pickled	225.3	67.3
Live Animals, for Food	2,290.8	809.4
Total	18,138.6	13,129.5

Sources of imports.--The bulk of meat imports has come from the United States. In 1955, more than 50 percent of our importation was American products, mostly canned meat and meat pastes. After the United States, Argentina and Australia were the main sources of our corned beef supply.

After 1955, however, Philippine meat imports started to depart from traditional sources. Meat imports from the United States declined substantially. By 1958, Philippine payments to that country for meat imports were less than one-half of the 1955 meat import value (Table VI-10).

Table VI-10.--Countries of Origin of Meat and Meat Products Importations, Philippines, 1955-1958

(Pesos)

Country	1955	1956	1957	1958
United States	7,743,448	6,163,460	5,485,674	3,058,804
Argentina	3,107,692	5,676,738	4,907,896	7,852,277
Brazil	288,076	-	275,226	923,072
Uruguay	-	561,562	574,118	913,701
Australia	2,984,484	3,446,684	3,465,512	6,020,701
New Zealand	-	238,854	882,944	499,800
Belgium	229,890	-	-	-
France	629,446	475,934	530,236	178,192
Netherlands	180,094	-	-	96,699
British Borneo	-	119,824	-	2,158
Hong Kong	361,820	-	-	91,507
Other Countries	322,796	394,020	454,297	199,771
Total	15,847,746	17,077,076	16,575,903	19,836,682

Source of Basic Data: Foreign Trade and Navigation of the Philippines, Bureau of the Census and Statistics.

The drop in United States meat imports to the Philippines is traceable to the rise of South American meat products coming to the Philippines. In 1958, Argentina exported some P7.8 million worth of meat to the country, with Brazil and Uruguay exporting some P0.9 million each. In total, the three countries accounted for a controlling percentage of 48 percent of total Philippine meat imports for the year. Australia trailed Argentina with P6 million which was about twice as much as the United States exported in 1958.

Other countries also experienced sizable reductions in their meat exports to the Philippines. From 1955 to 1958, meat imports from Hong Kong, France, and the Netherlands were reduced by 75, 72, and 46 percent respectively.

Policy on imports.--The government policy with respect to imports of meat and meat products is indicated by the Central Bank classification. Fresh/frozen meat, canned meat, and live cattle are considered as "decontrolled" items.

Usually live cattle imports are brought directly to the national abbatoir (at Marulas, Dulacan). This practice has alarmed some officials of the Bureau of Animal Industry and the National Economic Council but it has been forced by the lack of quarantine space. In one instance, cattle quarantined at Sisiman Island (near Corregidor) were decimated by a combination of two factors: (1) deep mud, which immobilized the cattle, and (2) swarms of carnivorous flies, which tortured the stuck cattle. During the last 5 years imports of live cattle have usually consisted of cheap scrawny breeds from Australia. Future plans of a large meat processing factory envision live animal imports from Australia. Except for the serious current lack of quarantine space, the feeling in some government circles (say, the National Economic Council) is that imports of live animals are desirable in order to supplement meat supply as well as for the useful byproducts (hides, animal meal, etc.) that can be processed in the Philippines.

During the last 5 years, significant amounts of canned meat imports, particularly canned corned beef, have been undertaken through the National Marketing Corporation (NAMARCO). This is a government agency created to (1) procure and buy commodities for distribution at "reasonable" prices to Filipino retailers in order to promote the latter's participation in the distribution system and (2) to stabilize prices of certain basic commodities in short supply by supplying such commodities to the general public at fair prices. Since the NAMARCO is a government agency, foreign exchange is available to it at the preferred exchange rate of $1 to P2. Hence, NAMARCO goods are priced below similar goods imported by private merchants. During fiscal years 1956 to 1959, the NAMARCO imported close to $4 million of corned beef, representing roughly 20 percent of all imports of this specific product. It is expected that substantial importations of canned meat products will be continued by this government agency.

5. Milk and Dairy Products

Form of imported commodity.--During the period 1946 to 1960, more than half (58 percent) of milk imports, both in volume and value terms, was in the form of canned evaporated whole milk and about one-fifth was in the form of condensed whole milk. This is to be expected since domestic production of fresh milk accounts for only 3 to 4 percent of annual consumption. Except for the manufacture of canned filled milk which started in 1957 (with imported nonfat dry milk mixed with coconut oil), there is no production of canned milk in the Philippines. Thus, the share of canned evaporated and condensed milk imports to total milk and milk products imports has been quite stable; at least previous to 1957.

The product of next importance is powdered milk--both whole milk and skimmed. With the manufacture of filled milk locally, a big shift from evaporated milk to powdered skimmed milk is expected to take place in the years ahead. In 1960, dry skimmed milk alone accounted for 13 percent of total milk imports in value terms and about 16 percent in quantity terms. Since 1958 dry skimmed milk has been imported from the United States in substantial quantities under the U. S. Agricultural Surplus Disposal Program.

Total butter and cheese imports have equaled 7 percent of total milk product imports from 1946 to 1960. This is attributable to the high price of these products in the Philippines. The more popular types of cheese are the Dutch Edam cheese and the American Cheddar cheese.

Other dairy products imported into the Philippines include fresh milk, sterilized natural milk, cream and curd, ice cream mix, and chocolate malts. Together, they total an average of about 5 percent of imports, in value terms (Table VI-11).

Table VI-11.--Percentage Distribution of Total Milk and Dairy Imports by Commodity Group, 1940; 1946-1960

Year	Total Imports (Thous. Pes.)	Percentage Distribution					
		Evap. Milk	Condens. Milk	Powdered Milk	Butter	Cheese	All Others*
1940	9,286	54.9	28.3	3.9	6.8	2.8	3.3
1946	21,424	65.4	16.1	13.7	a/	a/	4.7
1947	42,625	58.3	18.7	10.4	3.5	4.0	5.1
1948	45,825	58.5	22.1	7.1	5.1	2.4	4.8
1949	46,834	56.2	20.6	6.9	5.7	3.8	6.8
1950	36,840	50.9	29.1	9.8	2.5	1.2	6.5
1951	49,660	56.0	23.5	12.3	1.9	a/	6.2
1952	35,067	58.1	25.0	3.0	3.2	3.2	5.5
1953	45,736	54.3	25.1	8.8	2.9	3.1	5.8
1954	46,028	59.5	21.3	1.1	3.3	4.2	10.6
1955	54,367	62.8	17.0	-	3.2	3.0	14.0
1956	53,054	70.4	15.7	8.1	2.9	2.5	a/
1957	65,447	69.3	16.1	5.4	4.8	3.7	a/
1958	52,442	56.9	14.9	24.8	1.3	1.8	a/
1959	37,253	34.2	26.4	28.8	1.6	2.6	6.4
1960	49,649	47.9	17.9	24.2	a/	1.5	8.3
1946-60 (average)	47,300	58.0	20.0	10.0	4.0	3.0	5.0

*All others - natural milk, buttermilk, malted milk and other milk compounds.
a/ Less than 1 percent.

Sources of Basic Data: Bureau of the Census and Statistics
National Economic Council

Volume and value of milk and dairy product imports.--The domestic production of milk being negligible and increasing at a slow pace, importations of milk and milk products increased steadily through the years, as shown below.

Year	Value in Thousand Pesos	Fresh Milk Equivalent of All Imports - Metric Tons
1940	9,286	n.a.
1946	21,424	n.a.
1951	49,660	180,360
1955	54,367	208,960
1960	49,649	272,169

The decline in value in 1960 relative to 1955 is explained by the increased imports of dry skimmed milk (since 1958) for the manufacture of canned filled milk.

Sources of imports.--After World War II, the United States maintained control of the Philippine market for milk and milk products. Nevertheless, the United States share has been declining. In 1946, the U.S. supplied 96 percent of the total value of Philippine milk imports. This share decreased to 68 percent by 1955 and to 59 percent by 1959 (Table VI-12).

Table VI-12.--Percent Distribution of Total Milk and Dairy Imports by Country of Origin, 1939-1959

(In Terms of Value)

Country of origin	1939	1940	1946	1953	1954	1955	1956	1957	1958	1959
All Countries	100	100	100	100	100	100	100	100	100	100
United States	25	60	96	82	66	68	69	63	73	59
Netherlands	59	26	3	10	26	25	25	27	22	32
Australia	8	10	2	4	4	4	2	6	a/	3
Switzerland	2	a/	a/	2	2	2	2	1	2	3
All other Countries b/	6	4	a/	2	2	1	2	3	2	3

a/ Less than 1 percent.
b/ Includes (descending order) New Zealand, Great Britain, Denmark, West Germany Sweden, Hong Kong, Italy and Japan, among others.

Source of Basic Data: Foreign Trade and Navigation Statistics of the Philippines, Bureau of Census and Statistics, 1939-1959.

The Philippines buys substantial quantities of milk, cheese and butter from the Netherlands (Friesian and Dutch Baby milk, Edam cheese, etc.). The Netherlands accounted for about one-third of Philippine purchases of milk and milk products in 1959, a leap from a mere 3 percent in 1946.

Australia is the next major source of dairy products; notably fresh butter and cheddar cheese. Switzerland has had a steady share of 2 to 3 percent of the Philippine market.

Other sources of dairy products include New Zealand, Great Britain and Denmark (Table VI-12).

Government policy on importation of milk and dairy products.--The government, through the Central Bank's licensing, does not restrict the importation of full cream evaporated milk, condensed sweetened milk, sterilized milk and powdered milk for human consumption. They are "decontrolled" items.

Cheese and butter, however, have been placed under "nonessential consumers' items".

Judging from past performance, in the future the government will encourage the importation of milk and milk products as long as domestic production proves inadequate to meet the needs of the people. The National Marketing Corporation (NAMARCO), a government marketing firm, imports large quantities of canned milk, cheese and butter which it distributes to its many retail outlets throughout the islands. Since the NAMARCO policy is to procure and sell milk and milk products at the lowest prices, the European and Australian producers appear to have a price advantage and have increasingly supplied this government firm with much of its purchase orders.

6. Tobacco Imports

Form of tobacco imports.--From 1950 to 1960, tobacco imports have been undertaken in the following forms:

Form	Percent Distribution, 1950-1960 (Based on F.O.B. Value in Pesos)		
	1950	1960	Average 1950-1960
Leaf	59.67	85.67	79.42
Stems and Scraps	.13	.95	0.16
Cigars and Cheroots	*	*	*
Cigarettes	38.86	12.03	17.89
Chewing Tobacco	0.91	none	2.18
Smoking Tobacco	0.37	0.17	0.32
Others	0.06	1.18	0.03
	100.00	100.00	100.00

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*Less than one-hundredth of 1 percent.

Leaf and cigarettes, which constitute the major segment of imports, are of the aromatic type, mostly Virginia leaf and blends thereof. Through time, however, there has been a shift in the form of imported tobacco. While leaf constituted about 60 percent of tobacco imports in 1950, by 1960 this percentage had increased to about 86 percent. Imports of cigarettes constituted 12 percent of tobacco imports in 1960, as compared with about 39 percent in 1950 (Table VI-13).

Table VI-13. --Total Production, Imports and Exports of Leaf Tobacco, 1939; 1946-1960

(Thousand Kilograms)

Year	Domestic Production	Imports	Exports	Net Imports	Total Available Supply
1939	32,115	657	16,495	(15,838)	16,277
1946	14,332	54	1,639	(1,585)	12,747
1947	17,655	46	4,651	(4,605)	13,050
1948	18,487	44	2,804	(2,760)	15,727
1949	21,920	360	5,088	(4,728)	17,192
1950	26,398	13,060	3,691	9,369	35,767
1951	29,869	4,477	6,285	(1,808)	28,061
1952	26,666	14,761	11,262	3,499	30,165
1953	22,431	11,543	10,498	1,045	23,476
1954	27,659	6,599	9,312	(2,713)	24,946
1955	30,137	11,158	5,579	5,579	35,716
1956	38,357	3,272	7,713	(4,441)	33,916
1957	50,899	26	8,184	(8,158)	42,741
1958	49,600	2,446	10,590	(8,144)	41,456
1959	51,718	11	6,257	(6,246)	45,472
1960	63,257	295	4,691	(4,396)	58,861

Sources of Basic Data: Division of Agricultural Economics, DANR.
Bureau of the Census and Statistics.

Volume and value of tobacco imports.--The bulk of tobacco imports is of leaf and products made from the Virginia type of leaf. Significant imports of cigar wrapper tobacco, however, are also undertaken.

Imports of leaf have declined rapidly since 1952, when Republic Act. No. 698 was passed for the purpose of limiting the importation of foreign leaf tobacco. Starting in 1952, this law provided for a regressive schedule of tobacco importation with the exception of wrapper leaf for cigars. There was further decline from 1956, two years after Republic Act 1194 was passed to establish a price support program for Virginia leaf tobacco. In 1958, however, there was a substantial importation of Virginia leaf under a special barter arrangement wherein low quality Virginia tobacco was exchanged for high quality Virginia leaf.

Table VI-14.--Quantity and Value of Cigarette Imports, 1946-1960

Year	Cigarettes (sticks)	Value (Pesos)
1946	8,673,585,000	44,287,094
1947	9,912,201,000	42,322,204
1948	11,080,382,000	47,679,874
1949	8,348,988,000	33,130,408
1950	2,297,128,000	8,990,840
1951	1,054,035,000	6,345,364
1952	882,083,000	3,581,308
1953	396,942,000	2,870,794
1954	405,827,000	3,192,718
1955	371,490,000	2,788,514
1956	87,848,000	738,124
1957	75,603,000	711,986
1958	23,947,000	220,057
1959	12,193,200	109,207
1960	10,557,450	109,508

Source of Basic Data: Bureau of the Census and Statistics. 99 percent of cigarette imports during the above years came from the United States.

The trend in the imports of tobacco and tobacco products (value terms) is summarized for selected years as follows (also Table VI-14):

Year	Value (F.O.B. Prices) of Imports of Tobacco Leaf and Tobacco Products
1950	P 23,135,572
1955	28,203,294
1960	910,252

In quantity terms, the trend of imports for leaf tobacco and cigarettes is indicated as follows:

Year	Imports	
	Leaf, in Kilograms	Cigarettes (sticks)
	(Thousands)	
1950	13,060	2,297,128
1955	11,158	371,490
1960	295	10,557

Sources of imports.--During 1950 to 1960, the United States was the major source of Philippine imports of tobacco leaf and products:

Form	1950-1960 Period: Percent Distribution, By Source	
	United States	Other Countries
Leaf	99.87	0.13
Stems and Scraps	96.73	3.27
Cigars and Cheroots	96.79	3.21
Cigarettes	99.84	0.16
Chewing Tobacco	99.69	0.31
Smoking Tobacco	82.51	17.49
Other Tobacco	72.17	27.83
Total	100.00	100.00

Imports of leaf from other countries include wrapper tobacco from Indonesia, and Turkish tobacco for blending from Turkey.

Cigarette imports from other countries are mostly reported as coming from Hong Kong, Japan, and Great Britain (Table VI-15).

Table VI - 15. -- Sources of Imports of Tobacco and Tobacco Products, 1950 - 1960

(In Pesos, at F. O. B. Prices)

Country of Origin	Leaf	Stems and Scraps	Cigars and Cheroots	Cigarettes	Chewing Tobacco	Smoking Tobacco	Other Tobacco
United States							
1950	13,803,668	29,668	466	8,990,288	211,302	84,942	14,148
1951	10,127,298	23,170	74	6,339,336	671,692	52,132	-.-
1952	28,442,462	-.-	182	3,566,694	843,510	173,162	9,600
1953	23,421,046	5,616	44	2,868,548	-.-	-.-	-.-
1954	15,156,136	-.-	90	3,192,060	746,120	38,716	-.-
1955	25,185,640	198,374	152	2,777,070	-.-	29,488	-.-
1956	9,211,960	-.-	6,858	727,258	497,826	62,808	24
1957	214,252	-.-	104	711,448	477,150	-.-	404
1958	5,101,991	-.-	-.-	219,412	157,576	-.-	-.-
1959	116,666	-.-	-.-	109,090	-.-	-.-	-.-
1960	723,860	-.-	14	109,225	-.-	1,552	10,737
Total	131,504,979	256,828	7,984	29,609,829	3,605,176	442,800	34,913
All Others [a]							
1950	-.-	-.-	6	552	-.-	532	-.-
1951	26,172	-.-	-.-	6,028	4	310	-.-
1952	8	-.-	9	15,214	11,294	91,540	13,390
1953	-.-	-.-	-.-	2,246	-.-	-.-	-.-
1954	25,054	-.-	16	658	-.-	360	-.-
1955	-.-	-.-	16	11,444	-.-	1,110	-.-
1956	-.-	30	8	10,866	-.-	18	12
1957	41,892	-.-	12	538	6	8	58
1958	10,781	-.-	18	645	53	-.-	-.-
1959	5,969	-.-	-.-	117	-.-	-.-	-.-
1960	55,903	8,664	14	283	-.-	-.-	-.-
Total	165,779	8,694	99	48,591	11,357	93,878	13,460
Grand Total	131,670,758	265,522	8,083	29,658,420	3,616,533	536,678	48,373

[a] Includes: Canada, Great Britain, Greece, Turkey, Cuba, Hong Kong, British East Indies, China, Egypt, Hawaii, Japan, Malaya, Switzerland, Indonesia, India, Belgium, British Africa, B. Borneo, Germany, Netherlands, Thailand, and Australia.

Government policy on tobacco imports.--Republic Act No. 698, entitled "An Act to Limit the Importation of Foreign Leaf Tobacco" was passed in 1952. This law provided for a regressive schedule of importations starting in 1952. Two years later, on August 25, 1954, Republic Act No. 1194 was passed which amended R.A. 698. In this new law, the importation of leaf tobacco for 1956 and for the succeeding years shall be allowed only upon certification, to the President, by the Agricultural Credit and Cooperative Financing Administration, that the year's total production of Virginia type leaf tobacco is not sufficient to maintain the requirements of the manufacturing firms, and that all the Virginia leaf for sale has been bought. The authorized imports will then be "allocated and distributed by the Monetary Board of the Central Bank among legitimate manufacturers of Virginia type cigarettes on the basis of the production of each factory, and its stock inventory at the close of the calendar month preceding the allocation." In addition, no manufacturer would be entitled to the allocation unless he presents a certificate showing that he has purchased locally produced Virginia type leaf tobacco as provided in the law.

Corollary to the provisions on imports of R.A. 1194, are the "price subsidy" provisions which state that all locally grown and produced Virginia type leaf tobacco shall be purchased by the government through the ACCFA, for resale to the manufacturers of Virginia type cigarettes at cost. This does not, however, prohibit any manufacturer or dealer from buying directly from the farmers.

The following floor prices have been fixed for purchases of locally grown and produced Virginia type leaf:

For flue-cured Virginia leaf tobacco:	Pesos Per Kilo
a. Bright yellow leaf	3.60
b. Dull yellow	3.00
c. Spotted yellow leaf	2.50
d. Greenish and brownish leaf	2.00
e. Dark and other kinds	1.50
For sun-dried Virginia leaf tobacco:	
a. Light brown leaf	1.50
b. Brown leaf	1.00
c. Dark brown and other kinds	.80

In 1959, Republic Act No. 2265 was passed creating the Philippine Virginia Tobacco Administration. By this Act, all functions and operations of the ACCFA were transferred to the PVTA. Hence, all Facomas dealing primarily with Virginia tobacco trading shall be under the supervision and control of the PVTA, and the ACCFA is required to liquidate its tobacco trading operations and dispose of all its tobacco stocks.

Both R.A. 698 and R.A. 1194 were passed with one primary objective--to assure the growth and success of the young Virginia tobacco industry of the country, which includes the expansion of the manufacture of aromatic cigarettes. To achieve this objective, it was deemed necessary to limit the importation of foreign leaf and by means of the price subsidy program, to encourage greater local production.

These objectives appear to have been attained. Imports have declined, and local production has exceeded domestic requirements of the country.

The darker side of the subsidy program is the existence of huge government stockpiles of low quality Virginia leaf which is difficult to sell in the world market at original purchase price. At the same time, cigarette manufacturers strongly feel that they must have certain quantities of high quality Virginia leaf for blending purposes, in order to produce local cigarettes which can approximate the quality of foreign brands.

As a temporary remedy to the situation, in 1961 an importation of around 4.6 million kilos was authorized. Any domestic cigarette manufacturer who wants to take part of this importation will have to buy at least 4 kilos of the surplus for every kilo of the imported leaf. The proposed imports are then considered as a "shortage" in accordance with the terms of the law; a shortage in the sense that the type of Virginia tobacco demanded by the cigarette manufacturers is in short supply in this country.

7. Cotton

Form of cotton imports.--Imports of cotton and cotton products into the Philippines have been basically in the following forms:

Form	Imports		
	1950	1955	1960
	1. In thousand metric tons, in raw cotton equivalent		
Raw Cotton	2.70	2.32	31.40
Yarns and Thread	1.16	5.14	1.13
Grey Cloth	0.03	0.19	0.11
Finished Cloth	10.12	17.53	5.41
Total	14.01	25.18	38.05
	2. Percent distribution		
Raw Cotton	19.20	9.20	82.52
Yarns and Thread	8.31	20.41	2.97
Grey Cloth	0.24	0.77	0.29
Finished Cloth	72.25	69.62	14.22
Total	100.00	100.00	100.00

Although significant, imports of cotton wearing apparel and other cotton goods (towels, bed sheets, etc.), cannot be determined easily. 64/

There has been a radical shift in the pattern of cotton imports. In 1950, about 72.25 percent of total cotton imports (in quantity terms) was in the form of finished cloth (expressed in terms of its raw cotton equivalent). However, in 1960 only about 14.22 percent of cotton imports was in that form. Raw cotton imports, however, have increased about 12 times from 1950 to 1960 and in the latter year constituted about 82.5 percent of all cotton imports (Tables VI-16 and 17).

64/ In most years statistical reports do not indicate whether the wearing apparel is made of cotton. However, for selected years, the following partial data have been gathered:

Year	Value of Imports of Wearing Apparel (Thousand Pesos at F.O.B. Prices)			
	Socks	Jackets, etc.	Underwear	Outerwear
1946	1,159.1	5,505.30	1,542.80	4,093.90
1956	498.8	115.92	4.37	10.39
1959	5.8	1.36	0.75	6.41

Table VI-16.--Raw Cotton Production, Imports and Percentage of Production to Total Supply, 1948-1960

(Kilograms)

Year	Domestic Production	Imports	Total Supply	Percent of Production to Total Supply
1948	98,267	4,520	102,787	95.6
1949	121,600	894,203	1,015,803	12.0
1950	125,000	2,688,376	2,813,376	4.4
1951	127,300	778,614	905,914	14.0
1952	130,700	1,341,763	1,472,463	9.7
1953	40,900	3,658,543	3,699,443	1.1
1954	63,503	1,357,477	1,420,980	4.4
1955	85,133	2,316,559	2,401,692	3.4
1956	43,967	4,819,532	4,863,499	0.9
1957	174,000	8,606,155	8,780,155	2.0
1958	625,700	12,649,859	13,275,559	4.7
1959	656,167	23,165,330	23,821,497	2.7
1960	387,180	31,396,071	31,783,251	1.2

Sources of Basic Data: Agricultural Economics, DANR.
Bureau of the Census and Statistics.

Table VI-17.--Imports of Selected Principal Items of Cotton and Manufactures, 1939; 1947 - 1960

Year	Raw Cotton (Kgs.)	Yarns and Thread (Kgs.)	Cloth Unbleached (Sq. Yards)	Cloth, Bleached, Dyed, Printed (Sq. Yards)
1939	228,889	2,181,368	11,326,617	101,786,957
1947	1,767,773	462,943	5,355,071	117,482,854
1948	4,520	742,342	6,936,874	107,420,779
1949	894,203	759,817	1,709,124	130,200,713
1950	2,688,376	916,393	234,311	72,264,437
1951	778,614	1,486,599	219,352	142,812,570
1952	1,341,763	1,861,084	259,716	102,084,423
1953	3,658,543	3,126,158	537,606	123,765,473
1954	1,357,477	4,265,629	327,879	132,091,680
1955	2,316,559	4,048,329	1,380,886	125,239,852
1956	4,819,532	5,702,444	29,951,879	93,356,429
1957	8,606,155	7,348,880	67,206,396	114,229,156
1958	12,649,859	4,316,124	48,910,790	65,656,177
1959	23,165,330	3,873,893	22,399,915	55,112,745
1960	31,396,071	891,053	791,382	38,632,897

Source of Basic Data: Bureau of the Census and Statistics.

Sources of imports.--Data for selected years indicate that the major source of raw cotton imports has been the United States:

Year	Raw Cotton Imports (In Metric Tons)			
	Total	United States	Mexico	Others
1940	1,132.5	1,132.5	-	-
1954	1,357.5	1,319.1	-	38.4
1955	2,316.6	2,248.5	68.0	-
1956	4,819.5	4,630.8	142.6	46.1
1957	8,606.2	8,516.7	-	89.5
1959	23,165.3	21,653.3	1,452.2	59.8
1960	31,396.1	30,262.1	744.8	38.2

Roughly, raw cotton imports from the United States constitute more than 95 percent of all raw cotton imports. In addition to the United States and Mexico other countries from which raw cotton was reportedly imported include Bolivia, Pakistan, Spain, British Africa, Colombia, El Salvador, Norway, Brazil, Japan, and Hong Kong.

Policy on imports.--The apparent government policy is to develop the cotton textile industry to the point where the country is self-sufficient in cotton fabrics and related products.

For this purpose, imports of textile fabrics are banned. This is particularly the case if such textiles are being produced locally in sufficient quantities, are of comparable quality, and are being sold at reasonable prices.

However, raw cotton is not produced domestically in sufficient quantities, and it becomes necessary to import substantial amounts of raw cotton to sustain a well-developed integrated cotton textile industry.

8. Tallow

Form and volume of imports.--Initiated in 1956, tallow imports are largely of inedible tallow (Table VI-18). Increasing steadily since 1956, imports during 1960 were roughly 4 times that of 1950 (quality terms).

Table VI-18.--Imports of Edible and Inedible Tallow, 1946 - 1960

Year	Quantity (Metric Tons)			Value (Thousand Pesos)		
	Total	Edible	Inedible	Total	Edible	Inedible
1946	-	-	-	-	-	-
1947	-	-	-	-	-	-
1948	264.1	-	264.1	164.1	-	164.1
1949	237.4	-	237.4	115.5	-	115.5
1950	1,545.4	-	1,545.4	480.4	-	480.4
1951	4,479.5	-	4,479.5	3,237.7	-	3,237.7
1952	3,289.9	-	3,289.9	1,006.1	-	1,006.1
1953	4,976.2	-	4,976.2	1,193.4	-	1,193.4
1954	5,970.6	-	5,970.6	1,970.5	-	1,970.5
1955	5,158.1	-	5,158.1	1,829.1	-	1,829.1
1956	5,827.6	434.3	5,393.3	2,210.0	226.2	1,983.8
1957	5,577.9	0.8	5,577.1	2,081.5	0.7	2,080.8
1958	5,370.6	1,165.3	4,205.3	2,123.9	502.0	1,621.9
1959	6,970.9	363.3	6,607.6	2,223.9	157.6	2,066.3
1960	6,544.9	940.3	5,604.6	1,915.1	276.8	1,638.3

Source of Basic Data: Bureau of the Census and Statistics.

Sources of tallow imports.--The bulk of inedible tallow imports have come from the United States, with a small portion coming from Australia, Great Britain, and Japan. Import data from selected years are as follows:

Selected Year	Total	United States	Australia	Great Britain	Japan
			(In metric tons)		
1953	4,976	4,976	-	-	-
1954	5,970	5,688	282	-	*
1955	5,158	4,541	-	612	5
-					
1958	4,205	4,201	-	4	-
1959	6,608	6,955	13	-	-

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* 5 kilograms from Hong Kong.

E. Projections of Import Demand

On the basis of the projected sector balances, import demand for the selected agricultural commodities has been estimated for 1965 and 1975 (Table VI-19).

Table VI - 19. -- Imports of Selected Agricultural Commodities, 1955-1960, and Projections to 1965 and 1975

(In Thousands)

Year	Milled Rice	Shelled Corn	Wheat		Meat and Meat Products			Dairy Products	Tobacco		Cotton		Tallow
			Flour	Grain	Live-stock	Fresh/ Chilled Meat	Processed/ Canned Meat		Leaf	Cigarettes	Raw	Cotton Textile[d] Products	
A. In Value Terms (F.O.B. in Pesos)													
1955*	12,823	4	53,840	31	2,291	3,558	12,290	54,367	28,659	2,788	3,948	76,800	1,829
1956*	6,976	3	47,203	-	1,383	4,411	12,666	53,054	10,510	738	7,148	54,763	2,210
1957*	14,014	1,969	37,514	-	4,076	4,023	12,563	65,447	1,446	712	11,177	78,104	2,081
1958*	41,494	2,128	38,932	1,173	1,989	3,619	16,217	52,442	5,490	220	16,813	51,895	2,134
1959*	1,718	-	26,477	10,627	464	2,459	8,963	37,253	232	109	28,402	37,157	2,224
1960*	***	***	27,979	16,001	786	1,190	10,986	49,649	910	110	34,151	32,568	1,915
1965**	-	-	-	33,307	2,224	6,148	7,424	49,750	-	-	30,916	69,301	2,428
1975**	-	-	-	52,411	4,069	8,112	-	79,680	-	-	51,501	27,988	3,131
B. In Quantity Terms (In Metric Tons)													
1955	63.52	***	244.73	***	1.78[a]	3.68	10.21	208.96[b]	11.16	.37[c]	2.32	22.89[e]	5.16
1956	42.40	.04	215.10	-	1.46	5.43	12.43	234.30	3.27	.09	4.82	24.51	5.83
1957	77.90	10.75	286.62	-	3.81	4.57	12.00	313.84	.03	.08	8.61	34.73	5.58
1958	230.67	20.82	299.48	6.21	1.83	3.82	16.54	318.47	2.45	.02	12.65	21.52	5.37
1959	6.50	-	139.54	57.31	1.01	2.05	9.01	272.16	.01	.01	23.17	15.76	6.97
1960	***	***	161.77	82.60	.54	0.84	9.48	297.03	.30	.01	31.40	6.65	6.54
1965	-	-	-	326.30	5.28	7.04	3.15	202.29	-	-	38.12	4.39	7.86
1975	-	-	-	535.30	9.65	9.04	-	336.65	-	-	65.58	-	10.26

*In current prices.

**In 1956 prices.

***Less than P1,000 or 10 metric tons.

[a] Carcass weight.

[b] All in raw milk equivalent.

[c] All in leaf equivalent.

[d] Yarns and threads, grey cloth and finished cloth only.

[e] All in raw cotton equivalent.

The import projections for each of the selected commodities are as follows:

1. Rice.-No imports of milled rice are expected by 1965 and 1975.

2. Corn.-No imports of shelled corn are expected by 1965 and 1975.

3. Wheat.-No wheat flour imports are expected by 1965 and 1975. Wheat imports will shift entirely to wheat grain in those years.

On this point, however, there is a report that some amount of wheat flour may continue to be authorized for importation in order to prevent absolute control of the flour market by the wheat flour millers in the country.

4. Meat and Meat Products.-Imports of meat and meat products are expected to shift from processed/canned meats to fresh/frozen meat and live animals for slaughter.

Imports of processed and canned meat are projected to taper off from 1965, so that there will be no significant imports of such products by 1975. Again, the importations of special or fancy types of processed and canned meat products are not to be precluded.

The projections indicate that the imports of fresh/frozen meat in 1965 may be more than 3 times that of 1959 (quantity terms) and more than 4 times in 1975. This reverses the declining trend from 1956 to 1960 for imports of this form of meat products.

To support the expected rapid growth of the meat processing and canning industry, substantial increases in the imports of fresh/frozen meat as well as meat on-the-hoof have been projected. Projections for 1965 of livestock imports for food are more than 5 times the 1959 level. Projections for 1975 are over 9 times as great as the 1957 level. Again, this reverses the declining trend from 1957 to 1960 (quantity terms) in imports of live animals for food.

5. Dairy products.-Projections of dairy product imports show a slight drop in 1965 (quantity terms) but significant increases from 1965 to 1975.

The drop from 1960 to 1965 in the imports of dairy products (quantity terms; value terms, imports will increase slightly) is attributable to the expansion in the domestic production of filled milk, which (by definition) has been included as part of the dairy products.

6. Tobacco.-No imports of tobacco and tobacco products are expected by 1965 and 1975. However, it is conceivable that special types of tobacco products will continue to be imported in some amounts to satisfy the taste of some local users.

7. Cotton.-Import projections of cotton and cotton products indicate a shift from imports of cotton products to raw cotton.

Cotton products imports (including grey cloth as well as finished cloth, yarns, and threads) are expected to decline by more than 30 percent from 1960 to 1965 (they have already declined by more than 50 percent from 1959 to 1960). No imports of cotton products are expected by 1975.

Raw cotton imports, however, are expected to increase rapidly, so that imports by 1975 will be more than twice that of 1960.

8. Tallow.-Imports of tallow will continue in 1965 and 1975. Increases in imports will be almost equal to the trend observed in preceding years. All requirements for this commodity will be imported during the 1965-1975 period.

Appendix Table A-1. -- Sector Balance for Palay (Rough Rice) 1956: 1965 (A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	3,309.68	4,610.66	6,264.51
Households	797.63	621.86*	535.08*				
Stock Addition	55.53	11.17	38.49	Imports	-	-	-
Exports	**	**	**	Final Use	-	-	-
Total	853.16	633.03	573.57	Intermediate Use	-	-	-
Intermediate Demand				Stock Depletion	-	-	-
Seeds (Palay)	93.54	130.77	177.76				
Feeds (livestock)	49.06	81.02	142.37				
Rice Mills	2,310.13	3,629.89	5,137.63				
Other Grain	3.00	133.62	229.44				
Vermicelli and Noodles	0.18	1.17	1.80				
Other Food Mfts.	0.09	0.23	0.38				
Other Chemicals	0.53	0.93	1.56				
Total	2,456.52	3,977.63	5,690.94				
Total Demand	3,309.68	4,610.66	6,264.51	Total Supply	3,309.68	4,610.66	6,264.51

*Equivalent to 317,300 metric tons of milled rice in 1965; and to 273,000 metric tons in 1975.

**Negligible.

N. B. One cavan of palay is equal to 44 kilograms, net.

Appendix Table A - 1 (a). -- Sector Balance for Milled Rice*,
1956; 1965 (A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	1,522.63	2,427.28	3,465.19
Households	1,500.07	2,373.43	3,290.74				
Stock Addition	12.26	2.46	1.36	Imports	—	—	—
Exports	0.17	12.88	106.66	Final Use	—	—	—
Total	1,512.50	2,388.77	3,398.76	Intermediate Use	—	—	—
Intermediate Demand							
Rice Mills	1.40	2.20	3.12				
Other Grain	0.50	22.51	38.64				
Prepared Animal Feeds	5.38	8.90	15.65				
Beverages	2.85	4.90	9.02				
Total	10.13	38.51	66.43				
Total Demand	1,522.63	2,427.28	3,465.19	Total Supply	1,522.63	2,427.28	3,465.19

*Excludes byproducts (bran).

N.B. Total household demand, as projected on the basis of demand (income and household size) elasticities derived from the household budget survey, are as follows:

1965 : 2,653,270 metric tons
1975 : 3,351,530 metric tons

The data above, and in the preceding appendix table, vary slightly from these estimates.

Appendix Table A - 2. -- Sector Balance for Shelled Corn
1956; 1965(A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	901.40	1,447.05	1,983.30
Households	89.66	87.83	135.49				
Stock Addition	52.33	10.51	36.23	Imports	*	—	—
Exports	*	—	—	Final Use	—	—	—
Total	141.99	98.34	171.72	Intermediate Use	*	—	—
Intermediate Demand							
Seeds (Corn)	28.10	31.48	52.57	Stock Depletion	—	—	—
Feeds (Livestock and Poultry)	167.29	276.25	485.43				
Corn Mills	564.02	1,040.98	1,273.58				
Total	759.41	1,348.71	1,811.58				
Total Demand	901.40	1,447.05	1,983.30	Total Supply	901.40	1,447.05	1,983.30

*Negligible.

N. B. One cavan of shelled corn equals 57 kilograms, etc.
1956 = 15,814,000 cavans
1965 = 25,567,000 cavans
1975 = 42,846,000 cavans

Appendix Table A - 2 (a). -- Sector Balance for Milled Corn*, 1956, 1965 (A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	321.48	539.36	725.94
Households	266.19	465.30	601.73				
Stock Addition	9.46	1.90	6.53	Imports	-	-	-
Exports	1.20	1.71	2.02	Final Use	-	-	-
Total	276.85	468.91	610.28	Intermediate Use	-	-	-
Intermediate Demand				Stock Depletion	-	-	-
Vermicelli and Noodles	0.23	0.76	1.16				
Prepared Animal Feeds	28.56	47.26	83.08				
Starch and Byproducts	15.67	22.16	30.98				
Other Food Mfts.	0.17	0.27	0.44				
Total	44.63	70.45	115.66				
Total Demand	321.48	539.36	725.94	Total Supply	321.48	539.36	725.94

*Excludes byproducts (bran).

N. B. One cavan of milled corn weighs approximately 57 kilograms, net.

Appendix Table A - 3. -- Sector Balance for Wheat, Wheat Flour and Bakery Products Projections to 1965 (A) and 1975

(Quantity in Thousand Metric Tons, Wheat Flour Equivalent)

Demand	Wheat Grain		Wheat Flour		Bakery Products		Vermicelli and Noodles	
	1965	1975	1965	1975	1965	1975	1965	1975
Final Demand								
Households	-	-	2.18	3.43	195.84	308.07	29.49	45.12
Stock Addition	-	-	3.26	21.42	[a]	[a]	[a]	[a]
Exports	-	-	-	-	-	-	-	-
Total	-	-	5.44	24.85	195.84	308.07	29.49	45.12
Intermediate Demand								
Dairy Products	-	-	0.36	0.58	-	-	-	-
Other Food Mftr.	-	-	2.03	3.25	-	-	-	-
Bakery Products	-	-	195.84	308.07	-	-	-	-
Vermicelli and Noodles	-	-	29.49	45.12	-	-	-	-
Beverages	-	-	0.02	0.02	-	-	-	-
Wearing Apparel	-	-	[a]	0.01	-	-	-	-
Other Manufactures	-	-	1.66	3.29	-	-	-	-
Other Chemicals	-	-	0.06	0.11	-	-	-	-
Mechanical and Metallurgical	-	-	0.04	0.11	-	-	-	-
Flour Milling	326.30[b]	535.30[b]	-	-	-	-	-	-
Total	326.30	535.30	229.50	360.56	-	-	-	-
Total Demand	326.30	535.30	234.94	385.41	195.84	308.07	29.49	45.12
Supply								
Domestic Production	-	-	239.94	385.41	195.84	308.07	29.49	45.12
Imports	326.30	535.30	-	-	-	-	-	-
Final Use	-	-	-	-	-	-	-	-
Intermediate Use	326.30	535.30	-	-	-	-	-	-
Stock Depletion	-	-	-	-	-	-	-	-
Total Supply	326.30	535.30	239.94	385.41	195.84	308.07	29.49	45.12

[a] Negligible.

[b] Based on milling recovery rate of 72 percent by weight.

Appendix Table A-4. -- Sector Balance for Livestock and Poultry, Slaughter Houses and Preserved Meat, Projections to 1965 (A) and 1975

(Quantity in Thousand Metric Tons, Carcass Weight Equivalent)

Demand	Livestock and Poultry		Slaughter Houses		Prep. and Pres. Meat		Total	
	1965	1975	1965	1975	1965	1975	1965	1975
Final Demand								
Households	204.89	307.80	170.66	256.38	12.05	18.10	387.61	582.29
Stock Addition	a/	a/	–	–	–	2.01	–	2.01
Exports	–	–	0.14	0.18	–	–	0.14	0.18
Total	204.89	307.80	170.80	256.56	12.05	20.11	387.75	584.48
Intermediate Demand								
Prep. and Pres. Meat	–	–	8.90	20.11	–	–	8.90	20.11
Other Food Mftr.	–	–	0.08	0.13	–	–	0.08	0.13
Prepared Animal Feeds	–	–	1.09	1.92	–	–	1.09	1.92
Other Manufactures	–	–	*	*	–	–	*	*
Slaughter Houses	170.80	256.56	–	–	–	–	170.80	256.56
Total	170.80	256.56	10.07	22.16	–	–	180.87	278.72
Total Demand	375.69	564.36	180.87	278.72	12.05	20.11	568.62	863.20
Supply								
Domestic Production	370.41	554.71	173.83	269.68	8.90	20.11	553.14	844.50
Imports	5.28 b/	9.65 b/	7.04	9.04	3.15	–	15.48	18.70
Final Use	5.28	9.65	7.04	9.04	3.15	–	10.20	9.05
Intermediate Use	5.28	9.65	–	–	–	–	5.28	9.65
Stock Depletion	–	–	–	–	–	–	–	–
Total Supply	375.69	564.36	180.87	278.72	12.05	20.11	568.62	863.20

*Negligible.

a/ Cannot be disaggregated into livestock and poultry.

b/ Unit cost of 1956 importations of P 190 per head of cattle and buffaloes and average carcass weight of 250 kgs. per head used in calculations.

Appendix Table A-5. -- Sector Balance for Raw Milk and Dairy Products: Milk Products (Other Than Canned Whole and Filled Milk); Canned Filled Milk; and Canned Whole Milk; 1965 and 1975

(Quantity in Thousand Metric Tons, Fresh Milk Equivalent)

Demand	Raw Milk		Milk Products		Canned Whole Milk		Canned and Bottled[b]		Total	
	1965	1975	1965	1975	1965	1975	1965	1975	1965	1975
Final Demand										
Households	12.86	20.59	74.81	115.48	133.08	230.07	126.60	190.00	347.35	556.14
Stock Addition	-	-	-	-	*	*	4.40	0.40	4.40	.40
Exports	-	-	-	-	-	-	-	-	-	-
Total	12.86	20.59	74.81	115.48	133.08	230.07	131.00	190.40	351.75	556.54
Intermediate Demand										
Dairy Products (milk bottling)	-	-	-	-	-	-	-	-	-	-
Other Milk Products	1.97	3.15	-	-	-	-	-	-	1.97	3.15
Total Demand	14.83	23.74	74.81	115.48	133.08	230.07	131.00	190.40	353.72	559.69
Supply										
Domestic Production	14.83	23.74	5.60	8.90	-	-	-	-	151.43	223.04
Raw Milk	14.83	23.74	-	-	-	-	-	-	14.83	23.74
Ice Cream	-	-	0.70	1.50	-	-	-	-	.70	1.50
Butter	-	-	0.90	1.40	-	-	-	-	.90	1.40
Cheese (not native)	-	-	4.00	6.00	-	-	-	-	4.00	6.00
Canned Filled milk	-	-	-	-	-	-	131.00[a]	190.40[a]	131.00	190.40
Imports	-	-	69.21	106.58	133.08	230.07	-	-	202.29	336.65
Final Use	-	-	69.21	106.58	133.08	230.07	-	-	202.29	336.65
Intermediate Use	-	-	-	-	-	-	-	-	-	-
Stock Depletion	-	-	-	-	-	-	-	-	-	-
Total Supply	14.83	23.74	74.81	115.48	133.08	230.07	131.00	190.40	353.72	559.69

*Less than 1 per cent of total final demand.

[a] Does not include production capacity of filled milk not canned, e.g., bottled filled milk and milk products.

[b] Filled milk.

Appendix Table A-5(a).--Sector Balance for Raw Milk, 1956 and Projections to 1965 (A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	9.72	14.83	23.74
Households	9.39	12.86[b]	20.59[a]				
Stock Addition	-	-	-	Imports	-	-	-
Exports	-	-	-	Final Use	-	-	-
Total	9.39	12.86	20.59	Intermediate Use	-	-	-
Intermediate Demand							
Dairy Products (Milk bottling)	0.33	1.97	3.15	Stock Depletion	-	-	-
Total Demand	9.72	14.83	23.74	Total Supply	9.72	14.83	23.74

[a] Includes production of household industries for cottage cheese, and candy.

[b] For milk products other than canned whole or filled milk, the estimated household demands, in terms of raw milk equivalent are:

1965 : 74,810 metric tons
1975 : 115,480 metric tons

These milk products include butter (20 kilograms of raw milk to one kilogram of butter), cheese (10 kilograms of raw milk to one kilogram of cheese), powdered milk (7.6 kilograms of raw milk to one kilogram of powdered milk), ice cream (3.03 kilograms of raw milk for one kilogram of ice cream) and the like.

Appendix Table A-6 (a).--Sector Balance for Native Leaf Tobacco, 1956 and Projections to 1965 (A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	19.35	24.68	35.81
Households [a]	4.84	5.24	8.10				
Stock Addition	2.20	0.44	1.50	Imports	--	--	--
Exports	7.71	10.27	13.02	Final Use	--	--	--
Total	14.75	15.95	22.62	Intermediate Use	--	--	--
Intermediate Demand							
Tobacco Products (cigars and cigarettes)	4.60	8.73	13.19	Stock Depletion	--	--	--
Seeds (native leaf)	b/	b/	b/				
Total	4.60	8.73	13.19				
Total Demand	19.35	24.68	35.81	Total Supply	19.35	24.68	35.81

[a] Hand-rolled cigars and cigarettes.

[b] Not applicable.

Appendix Table A - 6 (b). -- Sector Balance for Manufactured Native Cigars and Cigarettes (Leaf Equivalent), Projections to 1965 and 1975

(Quantity in Thousand Metric Tons, in Leaf Equivalent)

Demand	1965	1975	Supply	1965	1975
Final Demand			Domestic Production	8.73	13.19
Households	5.03	7.79			
Stock Addition	1.70	2.40	Imports	--	--
Exports	2.00	3.00	Final Use	--	--
Total	8.73	13.19	Intermediate Use	--	--
Intermediate Demand					
			Stock Depletion	--	--
Total Demand	8.73	13.19	Total Supply	8.73	13.19

Appendix Table A-6 (c). -- Sector Balance for Manufactured Virginia Cigarettes (Leaf Equivalent): Projections to 1965 and 1975

(Quantity in Thousand Metric Tons, in Leaf Equivalent)

Demand	1965	1975	Supply	1965	1975
Final Demand			Domestic Production	22.79	33.91
Households	19.00	28.30			
Stock Addition	-	-	Exports	-	-
Exports	3.79	5.61	Final Use	-	-
Total	22.79	33.91	Intermediate Use	-	-
Intermediate Demand	-	-			
			Stock Depletion	-	-
Total Demand	22.79	33.91	Total Supply	22.79	33.91

Appendix Table A-6 (d). -- Sector Balance for Virginia Leaf Tobacco, 1956 and Projections to 1965 (A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	25.27	39.28	59.35
Households	-	-	-				
Stock Addition*	4.54	16.49	25.44	Imports	-	-	-
Exports	**	**	**	Final Use	-	-	-
Total	4.54	16.49	25.44	Intermediate Use	-	-	-
Intermediate Demand							
Seeds (Virginia leaf)	a/	a/	a/	Stock Depletion	-	-	-
Cigarettes (Tobacco Products)	20.73	22.79	33.91				
Total	20.73	22.79	33.91				
Total Demand	25.27	39.28	59.35	Total Supply	25.27	39.28	59.35

*Because of base year (1956) proportions used for estimating stock additions, the interindustry analysis gives only 880 metric tons and 3,040 metric tons for 1965 and 1975 respectively. However, it is known that, subsequent to the base year, huge stocks have been accumulated.

**Negligible.

a/ Not applicable

Appendix Table A - 7. -- Sector Balance for Cotton Textile Products and Wearing Apparel

(Quantity in Metric Tons of Raw Cotton Equivalent)

Demand	1956	1965	1975
Final Demand			
Households (Fabrics and, wearing apparel)	n. a.	42,378.00	64,968.00
Exports	n. a.	a/	a/
Stock Additions	n. a.	a/	a/
Total	n. a.	42,378.00	64,968.00
Intermediate Demand from:[b]			
Footwear	50.02	84.92	157.82
Soap and other cleansers	1.27	4.24	6.35
Mechanical and Metallurgical	483.37	722.97	1,714.86
Other manufactures	537.50	671.03	1,607.81
Total	1,072.16[c]	1,483.16	3,486.84
Total Demand	n. a.	43,861.16	68,454.84
Supply			
Domestic Production[d]	n. a.	39,475.04	68,454.84
Imports	n. a.	4,386.12	-
Total Supply	n. a.	43,861.16	68,454.84

n. a. - means data not available.

[a] Not explicitly considered.

[b] No import substitution for projections to 1965 and 1975.

[c] Thirteen (13) large establishments reporting.

[d] Assumed 90 % of total demand for 1965 and 100 % by 1975. It should be noted that installed spinning and weaving capacities by mid-1961 are sufficient to produce the 1965 requirements. If complete integration of operations is assumed by 1965 and 1975, so that no imports of semifinished textile goods should be anticipated, then the total national requirements for raw cotton will of course be equivalent or equal to the raw cotton equivalent of textile requirements. Thus, any import of semifinished textile goods for further processing should be regarded as equivalent to a reduction in raw cotton requirements.

Appendix Table A-8. --Sector Balance for Edible and Inedible Tallow, 1956 and Projections to 1965 (A) and 1975

(Quantity in Thousand Metric Tons)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	-	-	-
Households	-	-	-				
Stock Addition	-	-	-	Imports	5.83	7.86	10.26
Exports	-	-	-	Final Use	-	-	-
Total	-	-	-	Intermediate Use	5.83	7.86	10.26
Intermediate Demand							
Soap and Other Cleansers	1.34	5.85	8.49	Stock Depletion			
Other Chemicals	0.33	0.44	0.75				
Small-scale Industries	4.16[a]	1.57	1.02				
Total	5.83	7.86	10.26				
Total Demand	5.83	7.86	10.26	Total Supply	5.83	7.86	10.26

[a] Large due to non-and/or under-reporting by some big establishments.

Appendix Table B-1. -- Sector Balance for Palay (Rough Rice), 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	700,072	978,553	1,330,104
Households	168,717	131,523	113,169				
Stock Addition	10,323	2,076	7,156	Imports	-	-	-
Exports	1	2	3	Final Use	-	-	-
Total	179,041	133,601	120,328	Intermediate Use	-	-	-
Intermediate Demand				Stock Depletion	-	-	-
Seeds (Palay)	21,135	29,542	40,156				
Feeds (Livestock)	10,375	17,128	30,098				
Rice Mills	488,650	767,722	1,087,122				
Other Grain	674	30,104	51,670				
Vermicelli and Noodles	73	243	373				
Other Food Manufactures	31	50	81				
Other Chemicals	93	163	275				
Total	521,031	844,952	1,209,776				
Total Demand	700,072	978,553	1,330,104	Total Supply	700,072	978,553	1,330,104

Appendix Table B - 2. -- Sector Balance for Milled Rice*, 1956 Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand							
Households	624,377	987,894	1,369,706	Domestic Production	639,879	1,004,620	1,404,490
Stock addition	19,260	3,868	2,042				
Exports	21	1,610	13,333				
Total	643,658	993,372	1,385,081	Imports	6,698	—	—
				Final use	6,698	—	—
				Intermediate Use	—	—	—
Intermediate Demand							
Rice Mills	407	640	906				
Other Grain	149	6,654	11,422	Stock Depletion	—	—	—
Prepared Animal Feeds	1,546	2,560	4,500				
Beverages	817	1,394	2,581				
Total	2,919	11,248	19,409				
Total Demand	646,577	1,004,620	1,404,490	Total Supply	646,577	1,004,620	1,404,490

*Excluding byproducts demanded by livestock and poultry industry of P33,312 in 1956; P53,034 in 1965 and P93,190 in 1975.

Appendix Table B - 3. -- Sector Balance for Shelled Corn, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	128,767	144,279	240,958
Households	13,168	12,899	19,899				
Stock Addition	7,472	1,501	5,173				
Exports	—	—	—				
Total	20,640	14,400	25,072	Imports	4	—	—
				Final Use	—	—	—
				Intermediate Use	4	—	—
Intermediate Demand							
Seeds (corn)	3,652	4,092	6,834	Stock depletion	—	—	—
Feeds (Livestock and Poultry)	23,896	39,449	69,319				
Corn Mills	80,579	86,338	139,733				
Total	108,127	129,879	215,886				
Total Demand	128,767	144,279	240,958	Total Supply	128,767	144,279	240,958

Appendix Table B - 4. -- Sector Balance for Milled Corn*, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand							
Households	88,123	92,701	148,905	Domestic Production	97,574	102,964	166,017
Stock Addition	3,126	626	2,157	Imports	—	—	—
Exports	395	526	667	Final Use			
Total	91,644	93,853	151,729	Intermediate Use	—	—	—
Intermediate Demand				Stock Depletion	—	—	—
Vermicelli and Noodles	56	186	286				
Prepared Animal Feeds	2,546	4,216	7,411				
Starch and By-products	3,306	4,674	6,534				
Other Food Manufactures	22	35	57				
Total	5,930	9,111	14,288				
Total Demand	97,574	102,964	166,017	Total Supply	97,574	102,964	166,017

* Excluding production of bran, a byproduct amounting to P2,731 in 1956; P4,509 in 1965; and P7,923 in 1975.

Appendix Table B-5. -- Sector Balance for Livestock, Poultry; Slaughter Houses; Prep. and Preserved Meat, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	Livestock and Poultry		Slaughter Houses		Prep. and Preserved Meat		Total	
	1965	1975	1965	1975	1965	1975	1965	1975
Final Demand								
Households	990,663	1,811,413	825,181	1,214,283	57,974	107,899	1,873,818	3,133,595
Stock Addition	54,170	98,284	-	-	8	28	54,178	98,312
Exports	1,016	1,289	212	269	-	-	1,228	1,558
Total	1,045,849	1,910,986	825,393	1,214,552	57,982	107,927	1,929,224	3,233,465
Intermediate Demand								
Slaughter Houses	263,549	391,936	-	-	-	-	263,549	391,936
Other Food Mftr.	16	25	155	250	-	-	171	275
Prep. and Pres. Meat	-		14,602	32,990	-	-	14,602	32,990
Prep. Animal Feeds	-	-	185	326	-	-	185	326
Other Manufactures	-	-	2	6	-	-	2	6
Total	263,565	391,961	14,944	33,572	-	-	278,509	425,533
Total Demand	1,309,414	2,302,947	840,337[a]	1,248,124	57,982	107,927	2,207,733	3,658,998
Supply								
Domestic Production	1,305,403	2,295,610	830,921	1,235,699	47,771	107,927	2,184,095	3,639,236
Imports	4,011	7,337	9,416[a]	12,425	10,211		23,638	19,762
Final Use	4,011	7,337						
Intermediate Use								
Stock Depletion	-	-	-	-	-		-	-
Total Supply	1,309,414	2,302,947	840,337	1,248,124	57,982	107,927	2,207,733	3,658,998

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[a] Excludes byproducts such as hide and tallow

Appendix Table B-6.-- Sector Balance for Milk and Dairy Products, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	Raw Milk			Dairy Products			Total		
	1956	1965 (A)	1975	1956	1965 (A)	1975	1956	1965 (A)	1975
Final Demand									
Households	6,975	9,549	15,282	94,203	128,843	206,295	101,178	138,392	221,577
Stock Addition	-	-	-	-	8	28	-	8	28
Exports	-	-	-	-	-	-	-	-	-
Total	6,975	9,549	15,282	94,203	128,851	206,323	101,178	138,400	221,605
Intermediate Demand									
Dairy Products	317	1,912	3,061	645	3,890	6,229	962	5,802	9,290
Other Food Mftrs.	-	-	-	41	67	107	41	67	107
Beverages	-	-	-	55	94	174	55	94	174
Total	317	1,912	3,061	- 741	4,051	6,510	1,058	5,963	9,571
Total Demand	7,292	11,461	18,343	94,944	132,902	212,833	102,236	144,363	231,176
Supply									
Domestic Production	7,292	11,461	18,343	11,177	67,407[a]	107,936[a]	18,469	78,868	126,279
Imports	-	-	-	83,767	65,495	104,897	83,767	65,495	104,897
Final Use	-	-	-	83,127	63,832	102,212	83,127		
Intermediate Use	-	-	-	640	1,663	2,685	640	-	-
Stock Depletion	-	-	-	-	-	-	-	-	-
Total Supply	7,292	11,461	18,343	94,944	132,902	212,833	102,236	144,363	231,176

[a] Canned filleld milk estimated at P65,018 in 1965 and P104,111 in 1975.

Appendix Table B - 6 (a). -- Sector Balance for Raw Milk, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	7,292	11,461	18,343
Households a/	6,975	9,549	15,282				
Stock Addition	—	—	—	Imports	—	—	—
Exports	—	—	—	Final Use	—	—	—
Total	6,975	9,549	15,282	Intermediate Use	—	—	—
Intermediate Demand							
Dairy Products (Milk bottling) b/	317	1,912	3,061	Stock Depletion	—	—	—
Total	317	1,912	3,061				
Total Demand	7,292	11,461	18,343	Total Supply	7,292	11,461	18,343

a/ Projected on the basis of a quantity index (1956 = 100).

b/ Value of raw milk production going into the dairy products sector for bottling.

Appendix Table B-7. -- Sector Balance for Wheat Flour, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	-	59,990	100,285
Households	421	713	1,123				
Stock Addition	28,296	4,845*	16,071*	Imports	61,148	-	-
Exports	-	-	-	Final Use	28,717	-	-
Total	28,717	5,558	17,194	Intermediate Use	32,431	-	-
Intermediate Demand				Stock Depletion		-	-
Dairy Products	19	115	183				
Other Food Mftrs.	328	531	853				
Bakery Products	28,395	48,132	75,738				
Vermicelli and Noodles	233	775	1,190				
Beverages	1	2	3				
Wearing Apparel	45	64	95				
Other Manufactures	202	310	614				
Other Chemicals	82	140	238				
Mechanical and Metallurgical	6	9	22				
Small-scale Industries	3,120	4,354	4,155				
Total	32,431	54,432	83,091				
Total Demand	61,148	59,990	100,285	Total Supply	61,148	59,990	100,285

*May be shifted to fill up intermediate demand. As in the other sector balances, stock additions were obtained on the basis of base-year proportions. In the quantity sector balance (Appendix Table A-7), the stocks have been shifted to fill up intermediate demand for wheat flour by the vermicelli and noodles sector.

Appendix Table B-8. -- Sector Balance for Virginia Leaf Tobacco, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	38,632	62,439	96,711
Households	—	—	—				
Stock Addition	6,277	1,218	4,199	Imports	—	—	—
Exports	6	8	10	Final Use	—	—	—
Total	6,283	1,226	4,209	Intermediate Use	—	—	—
Intermediate Demand				Stock Depletion	—	—	—
Seeds (Virginia Leaf)	282	456	706				
Cigarettes (Tobacco products)	32,067	60,757	91,796				
Total	32,349	61,213	92,502				
Total Demand	38,632	62,439	96,711	Total Supply	38,632	62,439	96,711

Appendix Table B - 9. -- Sector Balance for Native Leaf Tobacco, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	18,677	24,990	36,424
Households	4,669	5,058	7,821				
Stock Addition	1,642	326	1,122	Imports	—	—	—
Exports	6,576	8,759	11,109	Final Use	—	—	—
Total	12,887	14,143	20,052	Intermediate Use	—	—	—
Intermediate Demand				Stock Depletion	—	—	—
Tobacco Products (Cigars and cigarettes)	5,568	10,550	15,939				
Seeds (native leaf)	222	297	433				
Total	5,790	10,847	16,372				
Total Demand	18,677	24,990	36,424	Total Supply	18,677	24,990	36 424

Appendix Table B - 10. -- Sector Balance for Cotton and Cotton Textile Products, 1965 and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	Raw Cotton		Cotton Textile Mills		Knitting Mills		Wearing Apparel	
	1965	1975	1965	1975	1965	1975	1965	1975
Final Demand								
Households	-	-	154,190	236,045	61,308	93,819	109,085	166,979
Stock Addition	489	1,685	68	236	68	236	480	1,654
Exports	9	12	209	265	-	-	35,255	44,715
Total	498	1,697	154,467	236,546	61,376	94,055	144,820	213,348
Intermediate Demand								
Cotton	17	26	-	-	-	-	-	-
Cotton Textile Mills	31,857	52,285	60,418	99,708	-	-	482	792
Knitting Mills	982	1,503	22,917	35,083	4,528	6,932	-	-
Other Textile Mftr.	27	54	-	-	-	-	33	65
Other Textile Mills	-	-	12	26	-	-	25	54
Cordage, Rope and Twine	-	-	119	207	-	-	75	132
Footwear	-	-	406	755	105	196	-	-
Wearing Apparel	-	-	41,491	61,349	3,436	5,085	-	-
Soap and Other Cleansers	-	-	13	20	-	-	-	-
Mechanical and Metall'al	-	-	1,544	3,661	-	-	-	-
Other Manufactures	-	-	524	1,037	-	-	-	-
Other Food Mftr.	-	-	-	-	42	67	1,913	3,073
Prepared Animal Feeds	-	-	-	-	-	-	873	1,534
Jute and Other Sacks	-	-	-	-	-	-	29,462	43,552
Total	32,883	53,868	127,444	201,846	8,111	12,280	32,863	49,202
Total Demand	33,381	55,565	281,911	438,392	69,488	106,335	177,683	262,550
Supply								
Domestic Production	385	600	268,553	410,200	67,996	104,067	164,384	241,826
Imports	32,995	54,964	20,870	8,139	1,492	2,244	18,396	27,393
Final Use	498	1,697	15,447	-	86	132	5,996	8,833
Intermediate Use	32,497	53,267	5,423	8,139	1,406	2,112	12,400[a]	18,560[a]
Stock Depletion	-	-	-	-	-	-	-	-
Statistical Discrepancy	-	-	(7,512)	20,053	-	24	(5,097)	(6,669)
Total Supply	33,381	55,565	281,911	438,392	69,488	106,335	177,683	262,550

[a] Jute and other sacks.

Appendix Table B - 10 (a). -- Sector Balance for Lint Cotton, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	255	386	601
Households	—	—	—				
Stock Addition	2,416	489	1,685	Imports	8,715	32,995	54,964
Exports	7	9	12	Final Use	—	—	—
Total	2,423	498	1,697	Intermediate Use	8,715	32,995	54,964
Intermediate Demand				Stock Depletion	—	—	—
Seeds (Cotton)	11	17	26				
Cotton Textile Mills	5,869	31,857	52,285				
Knitting Mill Products	649	982	1,503				
Other Manufactures	18	27	54				
Total	6,547	32,883	53,868				
Total Demand	8,970	33,381	55,565	Total Supply	8,970	33,381	55,565

Appendix Table B-11. -- Sector Balance for Edible and Inedible Tallow, 1956 and Projections to 1965 (A) and 1975

(Value in Thousand Pesos at 1956 Prices)

Demand	1956	1965 (A)	1975	Supply	1956	1965 (A)	1975
Final Demand				Domestic Production	—	—	—
Households	—	—	—				
Stock Addition	—	—	—	Imports	2,221	2,639	3,404
Exports	—	—	—	Final Use	—	—	—
Total	—	—	—	Intermediate Use	2,221	2,639	3,404
Intermediate Demand							
Soap and other Cleansers	559	1,867	2,709	Stock Depletion	—	—	—
Other Chemicals	105	183	311				
Small-scale Industries	1,557[a]	589	384				
Total	2,221	2,639	3,404				
Total Demand	2,221	2,639	3,404	Total Supply	2,221	2,639	3,404

[a] Large due to non-and/or under-reporting by some big establishments.

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Table A – Interindustry Flow of Goods and Services, by Consuming Industry, and Industry of Origin; Philippines, 1956
(Thousands of Pesos at Purchaser's Price)

CONSUMING SECTOR / PRODUCING SECTOR		Palay 1	Corn 2	Cotton 3	Virginia Tobacco 4	Native Tobacco 5	Livestock, Poultry and Dairy 6	Other Agricultural 7	Fishing & Hunting 8	Forestry 9	Mining 10	Slaughter Houses 11	Preserved and Prepared Meat 12	Dairy Products 13	Rice Mill Products 14	Corn Mill Products 15
1. Palay	D	21,135					10,375								488,650	
	I															
2. Corn	D		3,652				23,896									80,579
	I															
3. Cotton	D			11												
	I															
4. Virginia Tobacco	D				282											
	I															
5. Native Tobacco	D					222										
	I															
6. Livestock, Poultry, Dairy	D											203,364		317		
	I															
7. Other Agricultural	D						13,948	21,658					8	310		
	I												135	17		
8. Fishing and Hunting	D						2,675		2,164							
	I															
9. Forestry	D	768	132		58	66		839						1		
	I															
10. Mining	D															
	I															
11. Slaughter Houses	D												522			
	I												1			
12. Preserved, and Prepared Meat	D															
	I															
13. Dairy Products	D													389		
	I													256		
14. Rice Mill Products	D						32,124								407	
	I															
15. Corn Mill Products	D						2,731									
	I															
16. Other Grain Mill Products	D															
	I													19		
17. Bakery Products	D															
	I															
18. Vermicelli and Noodles	D															
	I															
19. Vegetable Lard and Margarine	D															
	I															
20. Prepared Animal Feeds	D						13,583									
	I						4,513									
21. Starch and By-Products	D													9		
	I													41		
22. Preserved Fish Products	D															
	I															
23. Other Food Manufactures	D								4,937				9	428		
	I													316		
24. Beverages	D															
	I															
25. Tobacco Products	D															
	I															
26. Cotton Textile Mills	D															
	I															
27. Other Textile Mills	D															
	I															
28. Knitting Mill Products	D															
	I															
29. Cordage, Rope and Twine	D															
	I															
30. Other Textile Manufactures	D															
	I															
31. Footwear	D															
	I															
32. Wearing Apparel, etc.	D	8,202	3,203	2				1,060							163	541
	I	4,997	1,950	1				645							99	267
33. Soap and Other Cleansers	D															
	I															
34. Other Chemical Products	D	2,562	529	20	144	41	150	2,579			2,308		24	35		
	I	6,112	1,264	47	344	100	357	6,151	241		5,506					
35. Mechanical and Metallurgical	D	6,915	1,183		527	590	2,488	7,560					59	512		
	I												16	129		
36. Other Manufactured Products	D												37	154		
	I												36	139		
37. Construction	D															
	I															
38. Trade, Transport & Services c/	D	84,706	13,457			11,279	47,143	185,459	87,729	100,398	39,412	126,108	381	2,224	132,412	13,937
	I	1,303	356	6	47	13	871	1,257	33		749		28	95	9	26
39. Fuel and Energy	D								18,654	12,298	9,910		13	158	2,477	623
	I															
TOTAL PRODUCED INPUTS d/		138,478	26,213	95	1,465	12,329	155,552	228,915	113,802	112,696	58,901	329,472	1,304	5,712	624,230	96,010
Total Domestic Production e/		39,582	8,699	33	1,011	919	101,970	33,696	27,981	12,298	12,218	203,364	682	2,313	491,697	81,743
Total Imports f/		11,109	3,214	48	344	100	4,870	6,796	241		5,506		188	917	99	267
Other Expenditures on Imports		3,081	843	14	110	31	1,569	2,964	77		1,765		63	258	22	63
40. (a) Expenditures Abroad		1,303	356	6	47	13	871	1,257	33		749		28	95	9	26
(b) Customs Duties		1,778	487	8	63	18	698	1,707	44		1,016		35	163	13	37
Total cost of Imports		14,190	4,057	62	454	131	6,439	9,760	318		7,271		251	1,175	121	330
Domestic Production + Imports		53,772	12,756	95	1,465	1,050	108,409	43,456	28,299	12,298	19,489	203,364	933	3,488	491,818	82,073
T & T Margins on Output		84,706	13,457			11,279	47,143	185,459	85,503	100,398	39,412	126,108	371	2,224	132,412	13,937
41. VALUE ADDED g/		561,594	102,550	160	37,167	6,348	642,109	773,976	320,783	397,623	172,824	311,697	407	5,465	48,961	4,295
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		700,072	128,763	255	38,632	18,677	797,661	1,002,891	434,585	510,319	231,725	641,169	1,711	11,177	673,191	100,305
43. FOREIGN TRADE			4	8,715			2,267	18,062	106	2,165	31,302	10,246	17,848	83,767	6,698	
Merchandise			3	8,680			2,221	14,932	77	1,578	26,300	7,288	12,746	59,083	6,546	
Insurance and Freight			1	35			46	3,129	29	587	5,002	2,958	5,102	24,684	152	
Others																
TOTAL SUPPLY		700,072	128,767	8,970	38,632	18,677	799,928	1,020,953	434,691	512,484	263,027	651,415	19,559	94,944	679,889	100,305

SEE NOTE AND FOOTNOTE AT END OF TABLE.

Table A – Interindustry Flow of Goods and Services, by Consuming Industry, and Industry of Origin; Philippines, 1956 (Continued)

(Thousands of Pesos at Purchaser's Price)

CONSUMING SECTOR / PRODUCING SECTOR		Other Grain Mill Products 16	Bakery Products 17	Vermicelli & Noodles 18	Vegetable Lard and Margarine 19	Prepared Animal Feeds 20	Starch and By-Products 21	Preserved Fish Products 22	Other Food Manu- factures 23	Beverages 24	Tobacco Products 25	Cotton Textile Mills 26	Other Textile Mills 27	Knitting Mill Products 28	Cordage Rope and Twine 29	Other Textile Manu- factures 30
1. Palay	D	674		73					31							
	I															
2. Corn	D															
	I															
3. Cotton	D													230		
	I											5,869		419		
4. Virginia Tobacco	D										32,067					
	I															
5. Native Tobacco	D										5,568					
	I															
6. Livestock, Poultry, Dairy	D			1					8							
	I															
7. Other Agricultural	D	98	74	29	9,061	118	318		127,863			276	13,217		4,095	1,857
	I					522			4,107	354						
8. Fishing and Hunting	D					877		259	60							
	I															
9. Forestry	D		883	3	3	5			424		4,564		13			
	I								161							
10. Mining	D															
	I															
11. Slaughter Houses	D								24							
	I					112			72							
12. Preserved, and Prepared Meat	D															
	I															
13. Dairy Products	D								26							
	I								15	55						
14. Rice Mill Products	D	149				1,546				817						
	I															
15. Corn Mill Products	D			56		2,546	3,306		22							
	I															
16. Other Grain Mill Products	D		2,557	40					18							
	I		28,395	233					328	2,188						
17. Bakery Products	D															
	I															
18. Vermicelli and Noodles	D															
	I															
19. Vegetable Lard and Margarine	D															
	I															
20. Prepared Animal Feeds	D															
	I															
21. Starch and By-Products	D		32	172			1,577		329			5				
	I			4					23			51				
22. Preserved Fish Products	D							188								
	I					870										
23. Other Food Manufactures	D		6,947		21	78		14	29,744	7,869		1		1		
	I		638						949	3						
24. Beverages	D															
	I															
25. Tobacco Products	D										5,518					
	I										7,813					
26. Cotton Textile Mills	D											22		997	71	
	I											9,357	6	10,447		
27. Other Textile Mills	D											405	244	722		
	I												4	883		
28. Knitting Mill Products	D								26					2,593		
	I													401		
29. Cordage, Rope and Twine	D															
	I														489	
30. Other Textile Manufactures	D															127
	I															
31. Footwear	D															
	I															
32. Wearing Apparel, etc.	D	18				328			733			55	10		28	9
	I	11				199			446			34	7		17	6
33. Soap and Other Cleansers	D															
	I															
34. Other Chemical Products	D		7,424	14	5,838			2	188	8,302				873	42	
	I		347	1	110		4		399	9,322		1,167	511			
35. Mechanical and Metallurgical	D							16	7,765	636						
	I								2,101	173					52	
36. Other Manufactured Products	D		3,553	201	585		175	166	6,245	8,215	9,381			95		
	I		2,412	36	72		172	21	5,664	1,607	1,688			85	54	
37. Construction	D															
	I															
38. Trade, Transport & Services c/	D	371	6,912	371	4,882	2,658	2,070	340	92,293	36,961	36,619	9,822	4,867	8,840	2,781	619
	I	1	6,040	51	24	273	20	3	1,744	2,034	621	1,097	70	895	35	
39. Fuel and Energy	D	14	1,042	24	309	64	206	16	4,438	1,107	5,076	706	169	499	132	6
	I						31									
TOTAL PRODUCED INPUTS d/		1,338	71,804	1,357	20,940	10,522	7,915	1,035	288,661	82,194	115,404	32,783	19,218	32,841	7,970	2,625
Total Domestic Production e/		953	21,528	613	15,817	5,562	5,582	661	178,306	28,741	62,175	1,589	13,669	5,139	4,368	2,000
Total Imports f/		11	31,792	274	182	1,703	207	26	14,265	13,702	9,501	16,478	528	13,108	612	6
Other Expenditures on Imports		3	11,593	99	59	599	56	8	4,159	4,585	7,110	5,013	170	5,756	209	1
40. (a) Expenditures Abroad		1	6,040	51	24	273	20	3	1,744	2,034	621	1,097	70	895	35	
(b) Customs Duties		3	5,553	48	35	326	36	5	2,415	2,551	6,489	3,916	100	4,861	174	1
Total cost of Imports		14	43,385	373	241	2,302	263	34	18,424	18,287	16,611	21,491	698	18,864	821	7
Domestic Production + Imports		967	64,913	986	16,058	7,864	5,845	695	196,730	47,028	78,786	23,080	14,367	24,003	5,189	2,007
T & T Margins on Output		371	6,891	371	4,882	2,658	2,070	340	91,931	35,166	36,618	9,703	4,851	8,838	2,781	618
41. VALUE ADDED g/		441	34,552	605	3,949	3,026	2,817	573	198,213	96,314	70,910	16,692	5,644	12,113	5,958	667
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		1,779	106,356	1,962	24,889	13,548	10,732	1,608	486,874	178,508	186,314	49,475	24,862	44,954	13,928	3,292
43. FOREIGN TRADE		62,898	280	544	4	4,513	437	30,671	17,783	4,132	12,073	95,159	34,254	996	2,974	6,095
Merchandise		45,031	194	395	3	3,048	351	21,631	12,989	2,933	12,010	79,890	25,132	706	2,308	4,990
Insurance and Freight		17,867	86	149	1	1,465	86	9,040	4,794	1,199	63	15,269	9,122	290	666	1,105
Others																
TOTAL SUPPLY		64,677	106,636	2,506	24,893	18,061	11,169	32,279	504,657	182,640	198,387	144,634	59,116	45,950	16,902	9,387

SEE NOTE AND FOOTNOTE AT END OF TABLE.

Table A – Interindustry Flow of Goods and Services, by Consuming Industry, and Industry of Origin; Philippines, 1956 (Continued)

(Thousands of Pesos at Purchaser's Price)

CONSUMING SECTOR / PRODUCING SECTOR		Footwear 31	Wearing Apparel, etc. 32	Soap and Other Cleansers 33	Other Chemical Products 34	Mechanical and Metallurgical 35	Other Manufactured Products 36	Construction 37	Trade, Transport, and Services 38	Fuel & Energy a/ 39	TOTAL INTER-MEDIATE USE	FINAL DEMAND			TOTAL USE = TOTAL SUPPLY
												EXPORTS	DOMESTIC USE b/	TOTAL	
1. Palay	D				93						521,031	1	179,040	179,041	700,072
	I														
2. Corn	D										108,127		20,646	20,636	128,763
	I												4	4	4
3. Cotton	D						14				255				255
	I						4				6,292	7	2,416	2,423	8,715
4. Virginia Tobacco	D										32,349	6	6,277	6,283	38,632
	I														
5. Native Tobacco	D										5,790	6,576	6,311	12,887	18,677
	I														
6. Livestock, Poultry, Dairy	D										203,690	763	593,208	593,971	797,661
	I												2,267	2,267	2,267
7. Other Agricultural	D	1	52	3			2,218				195,204	344,142	463,545	807,687	1,002,891
	I		2,673	11	21		794				8,634		9,428	9,428	18,062
8. Fishing and Hunting	D										6,035	462	428,088	428,550	434,585
	I												106	106	106
9. Forestry	D	15	19	4	286	68	32,768	99,664	42		140,625	89,408	280,286	369,694	510,319
	I						85				246		1,919	1,919	2,165
10. Mining	D				82	251	10,548	9,648			20,529	141,124	20,072	211,196	231,725
	I				79	16	962			23,922	24,979		6,323	6,323	31,302
11. Slaughter Houses	D						1,898				2,444	159	638,566	638,725	641,169
	I			559	105						849		9,397	9,397	10,246
12. Preserved, and Prepared Meat	D												1,711	1,711	1,711
	I												17,848	17,848	17,848
13. Dairy Products	D										415		10,762	10,762	11,177
	I										326		83,441	83,441	83,767
14. Rice Mill Products	D										35,043	1,209	636,939	638,148	673,191
	I												6,698	6,698	6,698
15. Corn Mill Products	D										8,661	395	91,249	91,644	100,305
	I														
16. Other Grain Mill Products	D										2,615	1	(837)	(836)	1,779
	I		45		82	6	202				31,498		31,400	31,400	62,898
17. Bakery Products	D											5	106,351	106,356	106,356
	I												280	280	280
18. Vermicelli and Noodles	D											1	1,961	1,962	1,962
	I												544	544	544
19. Vegetable Lard and Margarine	D											211	24,678	24,889	24,889
	I												4	4	4
20. Prepared Animal Feeds	D										13,583		(35)	(35)	13,548
	I										4,513				4,513
21. Starch and By-Products	D		7	233	176		56				2,596		8,136	8,136	10,732
	I										119		318	318	437
22. Preserved Fish Products	D										188	108	1,312	1,420	1,608
	I										870		29,801	29,801	30,671
23. Other Food Manufactures	D			3,895	60,060	85	45				114,129	267,813	108,080	372,745	486,874
	I			19	30		92				2,047		15,736	15,736	17,783
24. Beverages	D											2,782	175,726	178,508	178,508
	I												4,132	4,132	4,132
25. Tobacco Products	D										5,518	3,779	177,017	180,796	186,314
	I										7,813		4,260	4,260	12,073
26. Cotton Textile Mills	D		457				52				1,599	157	47,719	47,876	49,475
	I	179	20,486	3		713	214				41,405		53,754	53,754	95,159
27. Other Textile Mills	D		516		30	5	54				1,976	67	22,819	22,886	24,862
	I	18	10,812			19	554				12,290		21,964	21,964	34,254
28. Knitting Mill Products	D	62	1,774								4,455		40,499	40,499	44,954
	I		538								939		57	57	996
29. Cordage, Rope and Twine	D						21				21	4,082	9,825	13,907	13,928
	I		28			79	5				601		2,373	2,373	2,974
30. Other Textile Manufactures	D	69					44				240	1,455	1,597	3,052	3,292
	I	1,199	446				1,491				3,136		2,959	2,959	6,095
31. Footwear	D											56	36,059	36,115	36,115
	I												579	579	579
32. Wearing Apparel, etc.	D										14,352	26,469	69,775	96,244	110,596
	I										8,679		4,159	4,159	12,838
33. Soap and Other Cleansers	D											54	71,315	71,369	71,369
	I												695	695	695
34. Other Chemical Products	D	5		18,137	20,563	252	1,262	21,640		503	92,564	49,062	72,704	121,766	214,330
	I	83	34	4,093	8,751	608	6,787	4,956		265	58,433		39,281	39,281	97,714
35. Mechanical and Metallurgical	D				1,684	7,451	662	27,426			65,474	6,057	138,066	144,123	209,597
	I	18	858		605	69,003	2,433	51,214			126,607		360,542	360,542	487,149
36. Other Manufactured Products	D	1,614	1,571	1,860	7,238	4,980	40,521	97,136	14,995		197,722	24,736	189,907	214,643	412,365
	I	11,991	1,399	1,820	1,649	2,711	29,709	10,501	3,073		74,839		66,567	66,567	141,406
37. Construction	D												626,000	626,000	626,000
	I														
38. Trade, Transport & Services c/	D	7,444	23,329	14,219	42,291	41,900	84,128			31,459	1,299,821	21,494	1,885,643	1,907,137	3,206,958
	I	1,570	2,713	857	1,444	5,827	5,314	6,238	8,254	7,836	57,754		60,472	60,472	118,226
39. Fuel and Energy	D	133	499	767	2,146	3,908	15,516		66,594	6,149	153,653		32,705	32,705	186,358
	I			96	121	13	10		66,335	17,721	84,327		34,219	34,219	118,546
TOTAL PRODUCED INPUTS d/		27,292	83,335	47,817	149,599	150,479	247,322	340,580	180,242	102,038	3,930,485	992,641	8,278,126	9,270,767	13,201,252
Total Domestic Production e/		2,205	6,501	25,058	92,469	17,555	108,691	255,514	81,631	10,455	1,964,988				
Total Imports f/		13,488	37,219	6,601	11,443	73,168	43,342	66,691	69,408	41,908	499,442				1,312,919
Other Expenditures on Imports		4,461	17,792	2,098	3,507	18,411	14,173	18,395	29,203	22,019	180,339				374,430
40. (a) Expenditures Abroad		1,570	2,713	857	1,444	5,827	5,314	6,238	8,254	7,836	57,754				118,226
(b) Customs Duties		2,891	15,079	1,241	2,063	12,584	8,859	12,157	20,949	14,183	122,585		133,619	133,619	256,204
Total cost of Imports		17,949	55,111	8,699	14,950	91,579	57,515	85,066							
Domestic Production + Imports		20,154	61,612	33,757	107,419	10,913	166,206	340,580	98,611	63,927	679,781				1,687,349
T & T Margins on Output		7,138	21,723	14,060	42,180	41,345	81,116		180,242	74,382	2,644,769				
										27,656	1,285,716				
41. VALUE ADDED g/		8,823	27,261	23,552	64,731	59,118	165,043	285,420	3,026,716	84,320	7,583,417				
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		36,115	110,596	71,369	214,330	209,597	412,365	626,000	3,206,958	186,358	11,513,902				
43. FOREIGN TRADE		579	12,838	695	97,714	487,149	141,406		118,226	118,546	1,431,146				
Merchandise		401	8,999	460	82,565	375,962	112,146			80,302	1,130,128				
Insurance and Freight		178	3,839	235	15,149	111,187	29,260			38,244	301,018				
Others															
TOTAL SUPPLY		36,694	123,434	72,064	312,044	696,746	553,771	626,000	3,325,184	304,904	12,945,048				

NOTE: In the table, all goods consumed are classified under the sector in which they are produced (producer industry) and as to whether they are domestically-produced (D) and/or imported (I). For further details, see Text.

a/ Includes products of Petroleum and Coal, as well as Electricity and Gas.

b/ Includes Government and Household Consumption, Purchases on Capital Account, Net Change in Stocks and Tourists' Purchases of goods and services.

c/ The imported component represents estimated insurance and freight paid on imported raw materials and intermediate products consumed.

d/ Total including customs duties paid on imported raw materials (40-b).

e/ Total of purchases (consumption) of domestically produced raw materials and intermediate goods (including services), but excluding trade and transport margins on output, which are given separately below. Hence, the value of production at producer's price may be derived by subtracting from the gross value of production the estimated trade and transport margins on output.

f/ Total consumption of imported raw materials and intermediate products valued at FOB in the country of origin plus estimated domestic trade and transport margins incurred in securing them, but excluding customs duties, insurance and freight expenses which are given again separately.

g/ Gross value added representing payments to factors of production and direct and indirect taxes paid to government (but excluding customs duties on imports). In most of the manufacturing sectors, the value added figures also include non-factor expenses under general manufacturing "overheads" which could not be disaggregated. Except for these, the concept approximates "gross product" in the National Income accounting sense.

* Less than 11 thousand.

Table B—Projection of Interindustrial Transactions, 1965 (Without Import Substitution of Domestic Production For Imports of Raw Materials and Intermediate Goods) Hypothesis A

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Palay 1	Corn 2	Cotton 3	Virginia Tobacco 4	Native Tobacco 5	Livestock, Poultry and Dairy 6	Other Agricultural 7	Fishing and Hunting 8	Forestry 9	Mining 10	Slaughter Houses 11	Preserved and Prepared Meat 12	Dairy Products 13	Rice Mills 14
1. Palay	D	28,609					17,128								763,576
	I														
2. Corn	D		4,092				39,449								
	I														
3. Cotton	D			17											
	I														
4. Virginia Tobacco	D				456										
	I														
5. Native Tobacco	D					297									
	I														
6. Livestock, Poultry and Dairy	D											263,549		1,912	
	I														
7. Other Agricultural	D						23,027	33,173					223	1,870	
	I												3,769	102	
8. Fishing and Hunting	D						4,417		3,058						
	I														
9. Forestry	D	1,040	148		94	88		1,286						6	
	I														
10. Mining	D														
	I														
11. Slaughter Houses	D												14,574		
	I												28		
12. Preserved and Prepared Meat	D														
	I														
13. Dairy Products	D													2,346	
	I													1,544	
14. Rice Mills	D						53,034								636
	I														
15. Corn Mills	D						4,509								
	I														
16. Other Grain Mill Products	D														
	I													115	
17. Bakery Products	D														
	I														
18. Vermicelli and Noodles	D														
	I														
19. Vegetable Lard and Margarine	D														
	I														
20. Prepared Animal Feeds	D						22,424								
	I						7,451								
21. Starch and By-Products	D													54	
	I													247	
22. Preserved Fish Products	D														
	I														
23. Other Food Manufactures	D								6,976				251	2,581	
	I													1,906	
24. Beverages	D														
	I														
25. Tobacco Products	D														
	I														
26. Cotton Textile	D														
	I														
27. Other Textile Mills	D														
	I														
28. Knitting Mills	D														
	I														
29. Cordage, Rope and Twine	D														
	I														
30. Other Textile Manufactures	D														
	I														
31. Footwear	D														
	I														
32. Wearing Apparel, etc.	D	11,103	3,589	3				1,624							255
	I	6,764	2,185	2				988							155
33. Soap and Other Cleansers	D														
	I														
34. Other Chemical Products	D	3,468	593	30	233	55	248	3,949			3,109		670	211	
	I	8,273	1,416	71	556	134	589	9,421	341		7,418				
35. Mechanical and Metallurgical	D	9,360	1,326				4,107	11,579					1,647	3,088	
	I												447	778	
36. Other Manufactures	D				852	789							1,033	929	
	I												1,005	838	
37. Construction	D														
	I														
38. Trade, Transportation and Services	D	114,662	15,078			15,092	77,829	284,054	123,962	148,393	53,097	163,429	10,639	13,412	206,910
	I	1,764	399	9	76	17	1,438	1,926	47		1,009		782	573	15
39. Fuel Energy	D								26,358	18,177	13,351		363	953	3,870
	I														
TOTAL PRODUCED INPUTS		187,450	29,372	144	2,368	16,496	256,802	350,613	160,804	166,570	79,353	426,978	36,408	34,448	975,436
Total Domestic Production		168,242	24,826	50	1,635	16,321	246,172	335,665	160,354	166,570	69,557	426,978	29,400	27,362	975,247
Total Imports (FOB)															
Other Expenditures on Imports															
40 (a) Expenditures Abroad															
40 (b) Customs Duties		2,401	546	12	101	24	1,152	2,613	62		1,369		977	983	19
Total Cost of Imports		19,208	4,546	94	733	175	10,630	14,948	450		9,796		7,008	7,086	189
Domestic Production + Imports															
T & T Margins on Output															
41. VALUE ADDED		760,148	114,907	241	60,071	8,494	1,060,062	1,185,444	453,269	587,707	232,833	403,943	11,363	32,959	76,508
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		947,648	144,279	385	62,439	24,990	1,316,864	1,536,057	614,073	754,277	312,186	830,921	47,771	67,407	1,051,944

Table B—Projection of Interindustrial Transactions, 1965 (Without Import Substitution of Domestic Production For Imports of Raw Materials and Intermediate Goods) Hypothesis A (Continued)

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Corn Mills 15	Other Grain Mills 16	Bakery Products 17	Vermicelli and Noodles 18	Vegetable Lard and Margarine 19	Prepared Animal Feeds 20	Starch and By-Products 21	Preserved Fish Products 22	Other Food Manufactures 23	Beverages 24	Tobacco Products 25	Cotton Textile Mills 26	Other Textile Mills 27
1. Palay	D		4,282		243					50				
	I													
2. Corn	D	86,338												
	I													
3. Cotton	D													
	I												16,778	
4. Virginia Tobacco	D											60,757		
	I													
5. Native Tobacco	D											10,550		
	I													
66. Livestock, Poultry and Dairy	D				3					13				
	I													
7. Other Agricultural	D		623	125	96	21,462	195	450		206,782			789	19,525
	I						865			6,642	604			
8. Fishing and Hunting	D						1,452		803	97				
	I													
9. Forestry	D			1,497	10	7	8			686		8,647		19
	I									260				
10. Mining	D													
	I													
11. Slaughter Houses	D									39				
	I						185			116				
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D									42				
	I									25	94			
14. Rice Mills	D		946				2,560				1,394			
	I													
15. Corn Mills	D				186		4,216	4,674		35				
	I													
16. Other Grain Mill Products	D			4,335	133					29				
	I			48,132	775					531	3,734			
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													
	I													
21. Starch and By-Products	D			54	572			2,229		532			14	
	I				14					37			146	
22. Preserved Fish Products	D								583					
	I						1,441							
23. Other Food Manufactures	D			11,767		50	129		43	48,103	13,430	3		
	I			1,082						1,534	5			
24. Beverages	D													
	I													
25. Tobacco Products	D											10,455		
	I											14,803		
26. Cotton Textile	D												63	
	I												26,750	9
27. Other Textile Mills	D												1,158	360
	I													6
28. Knitting Mills	D									42				
	I													
29. Cordage, Rope and Twine	D													
	I													
30. Other Textile Manufactures	D													
	I													
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D	580	114				543			1,186			157	15
	I	286	70				330			721			97	10
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D			12,585	47	13,828			6	304	14,169			
	I			588	3	261		6		646	15,910		3,336	755
35. Mechanical and Metallurgical	D								50	12,558	1,086			
	I								15	3,398	295			
36. Other Manufactures	D			4,328	668	1,386		247	514	10,100	14,020	17,775		
	I			4,089	120	171		243	65	9,160	2,743	3,198		
37. Construction	D													
	I													
38. Trade, Transportation and Services	D	14,933	2,357	11,716	1,234	11,564	4,402	2,927	1,054	149,258	63,082	69,382	28,080	7,190
	I	28	6	10,238	170	57	452	28	28	2,820	3,471	1,176	3,136	103
39. Fuel and Energy	D	667	89	1,766	80	732	106	291	49	7,177	1,889	9,617	2,018	250
	I							44						
TOTAL PRODUCED INPUTS		102,872	8,500	121,715	4,513	49,599	17,424	11,190	3,207	466,828	140,280	248,656	93,721	28,390
Total Domestic Production		102,518	8,411	48,173	3,272	49,028	13,611	10,818	3,102	437,033	109,070	187,183	32,282	27,359
Total Imports (FOB)														
Other Expenditures on Imports														
40(a) Expenditures Abroad														
40(b) Customs Duties		40	13	9,413	159	82	540	51	16	3,905	4,354	12,296	11,196	148
Total Cost of Imports		354	89	73,542	1,241	571	3,813	372	105	29,795	31,210	31,473	61,439	1,031
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		4,602	2,801	58,569	2,012	9,354	5,011	3,983	1,776	320,554	164,380	134,353	47,719	8,337
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		107,474	11,301	180,284	6,525	58,953	22,435	15,173	4,983	787,382	304,660	353,009	141,440	36,727

Table B—Projection of Interindustrial Transactions, 1965 (Without Import Substitution of Domestic Production For Imports of Raw Materials and Intermediate Goods) Hypothesis A (Continued)

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Knitting Mill Products 28	Cordage, Rope & Twine 29	Other Textile Manufactures 30	Footwear 31	Wearing Apparel, etc. 32	Soap and Other Cleansers 33	Other Chemical Products 34	Mechanical and Metallurgical 35	Other Manufacture Products 36	Construction 37	Trade, Transport and Services 38	Fuel and Energy 39	TOTAL INTER-MEDIATE DEMAND 40
1. Palay	D							160						814,048
	I													
2. Corn	D													129,879
	I													
3. Cotton	D	347								21				385
	I	633								6				17,417
4. Virginia Tobacco	D													61,213
	I													
5. Native Tobacco	D													10,847
	I													
6. Livestock, Poultry and Dairy	D													265,477
	I													
7. Other Agricultural	D		6,859	4,063	2	74	10			3,371				322,719
	I					3,820	37	36		1,207				17,082
8. Fishing and Hunting	D													9,827
	I													
9. Forestry	D				25	27	13	488	102	49,798	105,865	68		169,922
	I									129				389
10. Mining	D							140	377	16,030	10,248			26,795
	I							135	24	1,462			46,007	47,628
11. Slaughter Houses	D									2,885				17,498
	I						1,867	179						2,375
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D													2,388
	I													1,663
14. Rice Mills	D													58,570
	I													
15. Corn Mills	D													13,620
	I													
16. Other Grain Mill Products	D													4,497
	I					64		140	9	307				53,807
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													22,424
	I													7,451
21. Starch and By-Products	D					10	778	300		85				4,628
	I													444
22. Preserved Fish Products	D													583
	I													1,441
23. Other Food Manufactures	D	1					13,005	102,535	128	68				199,070
	I						63	51		140				4,781
24. Beverages	D													
	I													
25. Tobacco Products	D													10,455
	I													14,802
26. Cotton Textile	D	1,506	119			653				79				2,420
	I	15,776			304	29,278	10		1,070	325				73,522
27. Other Textile Mills	D	1,091				737		51	8	82				3,487
	I	1,333			31	15,452			29	842				17,693
28. Knitting Mills	D	3,916			105	2,535								6,598
	I	605				769								1,374
29. Cordage, Rope and Twine	D									32				
	I		819			40			119	8				986
30. Other Textile Manufactures	D			278	117					67				462
	I				2,036	637				2,266				4,939
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D		47	20										19,236
	I		28	13										11,649
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D		70		8		60,559	35,105	378	1,918	22,987		967	175,497
	I	1,318			141	49	13,666	14,940	912	10,315	5,264		510	96,938
35. Mechanical and Metallurgical	D							2,875	11,180	1,006	29,132			257,934
	I		87		30	1,226		1,033	103,534	3,697	54,400			88,994
36. Other Manufactures	D	143			2,740	2,245	6,210	12,357	7,472	61,581	103,180	24,413		391,455
	I	128	90		20,357	2,000	6,077	2,815	4,068	45,148	11,155	5,002		272,982
37. Construction	D													
	I													
38. Trade, Transportation and Services	D	13,350	4,659	1,354	12,638	33,342	47,477	72,200	62,867	127,851			60,503	2,029,977
	I	1,351	59		2,665	3,877	2,862	2,465	8,743	8,076	6,626	13,439	15,070	94,982
39. Fuel Energy	D	754	221	13	226	713	2,561	3,664	5,864	23,580		108,414	11,826	245,639
	I						320	206	19	15		107,996	34,081	142,681
TOTAL PRODUCED INPUTS		49,595	13,350	5,743	46,333	119,098	159,659	255,397	225,784	375,861	361,771	293,436	196,242	6,092,407
Total Domestic Production		21,108	11,975	5,728	15,861	40,336	130,613	229,875	88,376	288,454	271,412	132,895	73,296	4,990,168
Total Imports (FOB)														
Other Expenditures on Imports														
40 (a) Expenditures Abroad														
40 (b) Customs Duties		7,343	292	2	4,908	21,550	4,144	3,522	18,881	13,463	12,914	34,104	27,278	200,879
Total Cost of Imports		28,487	1,375	15	30,472	78,762	29,046	25,522	137,408	87,407	90,359	160,541	122,946	1,102,238
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		18,293	9,979	1,459	14,979	38,960	78,639	110,509	88,703	250,820	303,179	4,927,567	162,166	11,756,763
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		67,888	23,329	7,202	61,312	158,058	238,298	365,906	314,487	626,681	664,950	5,221,003	358,408	17,849,110

Table C—Projection of Interindustrial Transactions, 1975 (Without Import Substitution of Domestic Production For Imports of Raw Materials and Intermediate Goods)

(Thousands of Pesos at 1956 Prices)

CONSUMING PRODUCING		Palay 1	Corn 2	Cotton 3	Virginia Tobacco 4	Native Tobacco 5	Livestock, Poultry, Dairy 6	Other Agricultural 7	Fishing and Hunting 8	Forestry 9	Mining 10	Slaughter Houses 11	Preserved and Prepared Meat 12	Dairy Products 13	Rice Mill Products 14
1. Palay	D	38,688					30,098								1,080,598
	I														
2. Corn	D		6,834				69,319								
	I														
3. Cotton	D			26											
	I														
4. Virginia Tobacco	D				706										
	I														
5. Native Tobacco	D					433									
	I														
6. Livestock, Poultry, Dairy	D											391,919		3,061	
	I														
7. Other Agricultural	D						40,462	58,462					505	2,994	
	I												8,515	164	
8. Fishing and Hunting	D						7,761		4,506						
	I														
9. Forestry	D	1,406	247		145	129		2,266						10	
	I														
10. Mining	D														
	I														
11. Slaughter Houses	D												32,927		
	I												63		
12. Preserved and Prepared Meat	D														
	I														
13. Dairy Products	D													3,757	
	I													2,472	
14. Rice Mill Products	D						93,190								901
	I														
15. Corn Mill Products	D						7,923								
	I														
16. Other Grain Mill Products	D														
	I													183	
17. Bakery Products	D														
	I														
18. Vermicelli and Noodles	D														
	I														
19. Vegetable Lard and Margarine	D														
	I														
20. Prepared Animal Feeds	D						39,402								
	I						13,092								
21. Starch and By-Products	D													87	
	I													396	
22. Preserved Fish Products	D														
	I														
23. Other Food Manufactures	D								10,278				568	4,133	
	I													3,052	
24. Beverages	D														
	I														
25. Tobacco Products	D														
	I														
26. Cotton Textile Mills	D														
	I														
27. Other Textile Mills	D														
	I														
28. Knitting Mill Products	D														
	I														
29. Cordage, Rope and Twine	D														
	I														
30. Other Textile Manufactures	D														
	I														
31. Footwear	D														
	I														
32. Wearing Apparel, etc.	D	15,014	5,994	5				2,861							360
	I	9,147	3,649	2				1,741							219
33. Soap and Other Cleansers	D														
	I														
34. Other Chemical Products	D	4,690	990	47	360	80	435	6,960			5,295		1,514	338	
	I	11,187	2,365	111	861	195	1,034	16,602	502		12,631				
35. Mechanical and Metallurgical	D	12,657	2,214		1,319	1,151	7,217	20,406					3,722	4,944	
	I												1,009	1,246	
36. Other Manufactures	D												2,334	1,487	
	I												2,271	1,342	
37. Construction	D														
	I														
38. Trade, Transport, and Services	D	155,053	25,183			21,997	136,759	500,603	182,634	253,440	90,416	243,032	24,033	21,477	292,815
	I	2,385	666	14	118	25	2,527	3,395	69		1,718		1,766	917	21
39. Fuel and Energy	D								38,834	31,044	22,734		820	1,526	5,477
	I														
TOTAL PRODUCED INPUTS		253,481	49,054	224	3,667	24,044	451,244	617,903	236,914	284,484	135,125	634,951	82,254	55,161	1,380,419
Total Domestic Production		227,507	41,462	78	2,530	23,790	432,566	591,558	236,252	284,484	118,445	634,951	66,423	43,814	1,380,151
Total Imports (FOB)															
Other Expenses on Imports															
40 (a) Expenditures Abroad															
40 (b) Customs Duties		3,254	910	19	158	34	2,025	4,607	91		2,331		2,207	1,575	28
Total Cost of Imports		25,974	7,592	146	1,137	254	18,678	26,345	662		16,680		15,831	11,347	268
Domestic Production + Imports															
T & T Margins on Output															
41. VALUE ADDED		1,027,990	191,907	376	93,044	12,380	1,862,709	2,089,171	667,809	1,003,742	396,478	600,696	25,673	52,775	108,273
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		1,281,471	240,961	600	96,711	36,424	2,313,953	2,707,074	904,723	1,288,226	531,603	1,235,647	107,927	107,936	1,488,692

Table C—Projection of Interindustrial Transactions, 1975 (Without Import Substitution of Domestic Production For Imports of Raw Materials and Intermediate Goods) (Continued)

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Corn Mill Products 15	Other Grain Mill Products 16	Bakery Products 17	Vermicelli and Noodles 18	Vegetable Lard and Margarine 19	Prepared Animal Feeds 20	Starch and By-Products 21	Preserved Fish Products 22	Other Food Manufactures 23	Beverages 24	Tobacco Products 25	Cotton Textile Mills 26	Other Textile Mills 27
1. Palay	D		11,035		373					81				
	I													
2. Corn	D	139,733												
	I													
3. Cotton	D													
	I												28,504	
4. Virginia Tobacco	D											91,796		
	I													
5. Native Tobacco	D											15,939		
	I													
6. Livestock, Poultry, Dairy	D				5					20				
	I													
7. Other Agricultural	D		1,605	198	148	42,142	343	628		332,231			1,341	41,122
	I						1,520			10,671	1,118			
8. Fishing and Hunting	D						2,553		2,357	156				
	I													
9. Forestry	D			2,355	15	14	15			1,102		13,065		40
	I									419				
10. Mining	D													
	I													
11. Slaughter Houses	D									62				
	I						326			187				
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D									68				
	I									39	174			
14. Rice Mill Products	D		2,439				4,500				2,581			
	I													
15. Corn Mill Products	D				286		7,411	6,534		57				
	I													
16. Other Grain Mill Products	D			6,820	204					47				
	I			75,738	1,190					853	6,912			
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													
	I													
21. Starch and By-Products	D			86	878			3,117		855			24	
	I				20					60			248	
22. Preserved Fish Products	D								1,711					
	I						2,532							
23. Other Food Manufactures	D			18,516		98	227		127	77,285	24,860		5	
	I			1,702						2,466	10			
24. Beverages	D													
	I													
25. Tobacco Products	D											15,796		
	I											22,366		
26. Cotton Textile Mills	D												107	
	I												45,444	19
27. Other Textile Mills	D												1,967	759
	I													13
28. Knitting Mill Products	D									67				
	I													
29. Cordage, Rope and Twine	D													
	I													
30. Other Textile Manufactures	D													
	I													
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D	938	295				955			1,905			267	31
	I	463	180				579			1,159			165	22
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D			19,802	72	27,152			18	488	26,228			
	I			926	5	512		8		1,037	29,451		5,668	1,590
35. Mechanical and Metallurgical	D								146	20,176	2,009			
	I								45	5,459	547			
36. Other Manufactures	D			6,809	1,026	2,721		346	1,511	16,227	25,953	26,855		
	I			6,434	184	335		340	191	14,716	5,077	4,832		
37. Construction	D													
	I													
38. Trade, Transport, and Services	D	24,168	6,074	18,437	1,894	22,706	7,737	4,091	3,094	239,808	116,768	104,826	47,702	15,143
	I	45	16	16,110	260	111	795	40	27	4,532	6,426	1,778	5,328	218
39. Fuel and Energy	D	1,081	229	2,779	123	1,437	186	407	146	11,531	3,497	14,531	3,429	526
	I							61						
TOTAL PRODUCED INPUTS		166,492	21,906	191,523	6,928	97,391	30,628	15,643	9,419	750,039	259,670	330,360	159,217	59,793
Total Domestic Production		165,920	21,677	75,802	5,024	96,270	23,927	15,123	9,110	702,166	201,896	282,808	54,842	57,621
Total Imports (FOB)														
Other Expenses on Imports														
40 (a) Expenditures Abroad														
40 (b) Customs Duties		64	33	14,811	245	163	949	71	46	6,275	8,059	18,576	19,018	310
Total Cost of Imports		572	229	115,721	1,904	1,121	6,701	520	309	47,873	57,774	47,552	104,375	2,172
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		7,448	7,220	92,161	3,089	18,367	8,808	5,568	5,214	515,026	304,279	202,989	81,068	17,560
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		173,940	29,126	283,684	10,017	115,758	115,758	39,436	21,211	14,633	1,265,065	563,949	533,349	240,285

Table C—Projection of Interindustrial Transactions, 1975 (Without Import Substitution of Domestic Production For Imports of Raw Materials and Intermediate Goods) (Continued)

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Knitting Mill Products 28	Cordage, Rope and Twine 29	Other Textile Manufactures 30	Footwear 31	Wearing Apparel, etc. 32	Soap and Other Cleansers 33	Other Chemical Products 34	Mechanical and Metallurgical 35	Other Manufactured Products 36	Construction 37	Trade, Transportation & Services 38	Fuel and Energy 39	TOTAL INTER-MEDIATE USE
1. Palay	D							270						1,161,143
	I													
2. Corn	D													215,886
	I													
3. Cotton	D	532								42				600
	I	969								12				29,485
4. Virginia Tobacco	D													92,502
	I													
5. Native Tobacco	D													16,372
	I													
6. Livestock, Poultry, Dairy	D													395,005
	I													
7. Other Agricultural	D		11,923	8,077	3	109	15			6,681				548,989
	I					5,638	53	61		2,392				30,132
8. Fishing and Hunting	D													17,333
	I													
9. Forestry	D				47	40	19	831	242	98,698	223,953	119		344,758
	I									256				675
10. Mining	D							238	894	31,771	21,679			54,582
	I							230	57	2,897			81,362	84,546
11. Slaughter Houses	D									5,717				38,706
	I						2,709	305						3,590
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D													3,825
	I													2,685
14. Rice Mill Products	D													103,611
	I													
15. Corn Mill Products	D													22,211
	I													
16. Other Grain Mill Products	D													7,071
	I					95		238	22	609				85,840
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													39,402
	I													13,092
21. Starch and By-Products	D					15	1,129	511		169				6,871
	I													724
22. Preserved Fish Products	D													1,711
	I													2,532
23. Other Food Manufactures	D	2					18,877	174,531	303	135				329,945
	I						92	87		277				7,686
24. Beverages	D													
	I													
25. Tobacco Products	D													15,796
	I													22,366
26. Cotton Textile Mills	D	2,305	207			964				156				3,739
	I	24,151			565	43,208	15		2,538	645				116,585
27. Other Textile Mills	D	1,669				1,088		87	18	163				5,751
	I	2,041			57	22,804			68	1,668				26,651
28. Knitting Mill Products	D	5,994			196	3,741								9,998
	I	927				1,135								2,062
29. Cordage, Rope and Twine	D									63				63
	I		1,424			59			281	15				1,779
30. Other Textile Manufactures	D			553	218					133				904
	I				3,784	941				4,491				9,216
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D		82	39										28,746
	I		50	26										17,402
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D		122		16		87,901	59,755	897	3,801	48,627		1,711	297,299
	I	2,018			262	72	19,837	25,430	2,164	20,443	11,137		901	166,949
35. Mechanical and Metallurgical	D							4,894	26,523	1,994	61,628			171,000
	I		151		57	1,810		1,758	245,630	7,328	115,081			380,121
36. Other Manufactures	D	219			5,094	3,313	9,015	21,033	17,728	122,050	218,272	42,832		524,825
	I	197	157		37,846	2,951	8,821	4,792	9,650	89,484	23,597	8,775		221,992
37. Construction	D													
	I													
38. Trade, Transport, and Services	D	20,436	8,097	2,692	23,495	49,204	68,913	122,895	149,151	253,395			106,996	3,365,164
	I	2,069	102		4,955	5,722	4,153	4,196	20,743	16,006	14,017	23,578	26,657	171,500
39. Fuel and Energy	D	1,154	384	26	420	1,052	3,717	6,237	13,911	46,735		190,209	20,914	425,096
	I						465	351	46	30		189,476	60,272	250,701
TOTAL PRODUCED INPUTS		75,920	23,206	11,417	86,140	175,764	231,746	434,725	535,661	744,939	765,309	514,823	347,046	10,254,630
Total Domestic Production		32,311	20,815	11,387	29,489	59,526	189,586	391,282	209,667	571,703	574,159	233,160	129,621	8,248,903
Total Imports (FOB)														
Other Expenses on Imports														
40 (a) Expenditures Abroad														
40 (b) Customs Duties		11,237	507	4	9,125	31,803	6,015	5,995	44,795	26,683	27,318	59,834	48,238	357,413
Total Cost of Imports		43,609	2,391	30	56,651	116,238	42,160	43,443	325,994	173,236	191,150	281,663	217,425	2,005,727
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		28,002	17,347	2,901	27,847	57,497	114,145	188,105	210,443	497,113	641,362	8,645,246	286,786	20,118,614
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		77,353	103,922	40,553	14,318	113,987	345,891	622,830	746,104	1,242,052	1,406,671	9,160,069	633,832	30,373,244

Table D – Projections of Industrial Transactions (With Limited Import Substitution of Domestic Product for Imported Raw Materials and Intermediate Products), 1965 Hypothesis A

(Thousand of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Palay	Corn	Cotton	Virginia Tobacco	Native Tobacco	Livestock, Poultry, Dairy	Other Agricultural	Fishing and Hunting	Forestry	Mining	Slaughter Houses	Preserved and Prepared Meat	Dairy Products	Rice Mill Products
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Palay	D	29,604					17,128								767,722
	I														
2. Corn	D		4,092				39,449								
	I														
3. Cotton	D			17											
	I														
4. Virginia Tobacco	D				456										
	I														
5. Native Tobacco	D					297									
	I														
6. Livestock, Poultry, Dairy	D											263,549		1,912	
	I														
7. Other Agricultural	D						23,027	33,299					223	1,870	
	I												3,769	102	
8. Fishing and Hunting	D						4,417		3,058						
	I														
9. Forestry	D	1,076	148		94	88		1,291						6	
	I														
10. Mining	D														
	I														
11. Slaughter Houses	D												14,574		
	I												28		
12. Preserved and Prepared Meat	D														
	I														
13. Dairy Products	D													2,346	
	I													1,544	
14. Rice Mill Products	D						53,034								640
	I														
15. Corn Mill Products	D						4,509								
	I														
16. Other Grain Mill Products	D													149	
	I														
17. Bakery Products	D														
	I														
18. Vermicelli and Noodles	D														
	I														
19. Vegetable Lard and Margarine	D														
	I														
20. Prepared Animal Feeds	D						22,424								
	I						7,451								
21. Starch and By-Products	D													54	
	I													247	
22. Preserved Fish Products	D														
	I														
23. Other Food Manufactures	D								6,976				251	2,581	
	I													1,906	
24. Beverages	D														
	I														
25. Tobacco Products	D														
	I														
26. Cotton Textile Mills	D														
	I														
27. Other Textile Mills	D														
	I														
28. Knitting Mill Products	D														
	I														
29. Cordage, Rope and Twine	D														
	I														
30. Other Textile Manufactures	D														
	I														
31. Footwear	D														
	I														
32. Wearing Apparel, etc.	D	11,488	3,589	3				1,630							256
	I	7,000	2,185	2				992							156
33. Soap and Other Cleansers	D														
	I														
34. Other Chemical Products	D	3,589	593	30	233	55	248	3,964			3,111		670	211	
	I	8,561	1,416	71	556	134	589	9,457	341		7,423				
35. Mechanical and Metallurgical	D	9,685	1,326		852	789	4,107	11,623					1,647	3,088	
	I												447	778	
36. Other Manufactured Products	D												1,033	929	
	I												1,005	838	
37. Construction	D														
	I														
38. Trade, Transport, and Services	D	118,648	15,078			15,092	77,829	285,134	123,962	148,518	53,134	163,429	10,639	13,412	208,034
	I	1,825	399	9	76	17	1,438	1,933	47		1,010		782	555	15
39. Fuel and Energy	D								26,358	18,192	13,361		363	953	3,891
	I														
TOTAL PRODUCED INPUTS		193,966	29,372	144	2,368	16,496	256,802	351,946	160,804	166,710	79,409	426,978	36,408	34,448	980,733
Total Domestic Production		174,090	24,826	50	1,635	16,321	246,172	336,941	160,354	166,710	69,606	426,978	29,400	27,511	980,543
Total Imports (FOB)															
Other Expenditures on Imports															
40. (a) Expenditures Abroad															
40. (b) Customs Duties		2,490	546	12	101	24	1,152	2,623	62		1,370		977	967	19
Total Cost of Imports		19,876	4,546	94	733	175	10,630	15,005	450		9,803		7,008	6,937	190
Domestic Production + Imports															
T & T Margins on Output															
41. VALUE ADDED		786,628	114,907	241	60,071	8,494	1,060,062	1,189,954	453,269	588,201	232,997	403,943	11,363	32,959	76,923
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		980,594	144,279	385	62,439	24,990	1,316,864	1,541,900	614,073	754,911	312,406	830,921	47,771	67,407	1,057,656

Table D – Projections of Industrial Transactions (With Limited Import Substitution of Domestic Product for Imported Raw Materials and Intermediate Products), 1965 Hypothesis A (Continued)

(Thousand of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Corn Mill Products 15	Other Grain Mill Products 16	Bakery Products 17	Vermicelli and Noodles 18	Vegetable Lard and Margarine 19	Prepared Animal Feeds 20	Starch and By-Products 21	Preserved Fish Products 22	Other Food Manufactures 23	Beverages 24	Tobacco Products 25	Cotton Textile Mills 26	Other Textile Mills 27
1. Palay	D		30, 104		243					50				
	I													
2. Corn	D	86, 338												
	I													
3. Cotton	D													
	I												31, 857	
4. Virginia Tobacco	D											60, 757		
	I													
5. Native Tobacco	D											10, 550		
	I													
6. Livestock, Poultry, Dairy	D				3					13				
	I													
7. Other Agricultural	D		4, 377	125	96	21, 462	195	450		207, 415			1, 498	20, 102
	I						865			6, 662	604			
8. Fishing and Hunting	D						1, 452		803	97				
	I													
9. Forestry	D			1, 497	10	7	8			688		8, 647		19
	I									261				
10. Mining	D													
	I													
11. Slaughter Houses	D									39				
	I						185			116				
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D									42				
	I									25	94			
14. Rice Mill Products	D		6, 654				2, 560				1, 394			
	I													
15. Corn Mill Products	D				186		4, 216	4, 674		35				
	I													
16. Other Grain Mill Products	D			67, 572	1, 151					723	2			
	I									2	3, 732			
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													
	I													
21. Starch and By-Products	D			54	572			2, 229		534			27	
	I				14					37			277	
22. Preserved Fish Products	D								583					
	I						1, 441							
23. Other Food Manufactures	D			11, 767		50	129		43	48, 250	13, 430		5	
	I			1, 082						1, 539	5			
24. Beverages	D													
	I													
25. Tobacco Products	D											10, 455		
	I											14, 803		
26. Cotton Textile Mills	D												56, 593	12
	I												3, 825	
27. Other Textile Mills	D												2, 199	371
	I													6
28. Knitting Mill Products	D									42				
	I													
29. Cordage, Rope and Twine	D													
	I													
30. Other Textile Manufactures	D													
	I													
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D	580	804				543			1, 190			298	15
	I	286	491				330			723			184	10
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D			12, 585	47	13, 828			6	305	14, 169			
	I			588	3	261		6		648	15, 910		6, 334	777
35. Mechanical and Metallurgical	D								50	12, 596	1, 086			
	I								15	3, 409	295			
36. Other Manufactured Products	D			4, 328	668	1, 386		247	514	10, 131	14, 020	17, 775		
	I			4, 089	120	171		243	65	9, 188	2, 743	3, 198		
37. Construction	D													
	I													
38. Trade, Transport, and Services	D	14, 933	16, 570	11, 716	1, 234	11, 564	4, 402	2, 927	1, 054	149, 713	63, 082	69, 382	53, 315	7, 403
	I	28	44	2, 155	40	57	452	28	9	2, 743	3, 471	1, 176	4, 599	106
39. Fuel and Energy	D	667	625	1, 766	80	732	106	291	49	7, 199	1, 889	9, 617	3, 832	257
	I							44						
TOTAL PRODUCED INPUTS		102, 872	59, 759	121, 715	4, 513	49, 600	17, 424	11, 190	3, 207	468, 256	140, 280	218, 656	177, 948	29, 229
Total Domestic Production		102, 518	59, 134	111, 410	4, 290	49, 029	13, 611	10, 818	3, 102	439, 062	109, 072	187, 183	117, 767	28, 179
Total Imports (FOB)														
Other Expenditures on Imports														
40. (a) Expenditures Abroad														
40. (b) Customs Duties		40	90	2, 391	46	82	540	51	16	3, 841	4, 354	12, 296	13, 105	151
Total Cost of Imports		354	625	10, 305	223	571	3, 813	372	105	29, 194	31, 208	31, 473	60, 181	1, 050
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		4, 602	19, 696	58, 569	2, 012	9, 354	5, 011	3, 983	1, 776	321, 534	164, 380	134, 353	90, 605	8, 583
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		107, 474	79, 455	180, 284	6, 525	58, 953	22, 435	15, 173	4, 983	789, 790	304, 660	353, 009	268, 553	37, 812

Table D – Projections of Industrial Transactions (With Limited Import Substitution of Domestic Product for Imported Raw Materials and Intermediate Products), 1965 Hypothesis A (Continued)

(Thousand of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Knitting Mill Products 28	Cordage, Rope and Twine 29	Other Textile Manufactures 30	Footwear 31	Wearing Apparel 32	Soap and Other Cleansers 33	Other Chemical Products 34	Mechanical and Metallurgical 35	Other Manufactured Products 36	Construction 37	Trade, Transport, and Services 38	Fuel and Energy 39	TOTAL INTER-MEDIATE DEMAND
1. Palay	D							163						845,014
	I													
2. Corn	D													129,879
	I													
3. Cotton	D	348								21				386
	I	634								6				32,497
4. Virginia Tobacco	D													61,213
	I													
5. Native Tobacco	D													10,847
	I													
6. Livestock, Poultry, Dairy	D													265,477
	I													
7. Other Agricultural	D		6,859	4,063	2	77	10			3,410				328,560
	I					3,973	37	37		1,220				17,269
8. Fishing and Hunting	D													9,827
	I													
9. Forestry	D				25	28	13	499	111	50,369	105,865	69		170,558
	I									31				392
10. Mining	D							143	410	16,214	10,248			27,015
	I							138	26	1,479			46,841	48,484
11. Slaughter Houses	D									2,918				17,531
	I						1,867	183						2,379
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D													2,388
	I													1,663
14. Rice Mill Products	D													64,282
	I													
15. Corn Mill Products	D													13,620
	I													
16. Other Grain Mill Products	D					83		186	12					69,878
	I					3		3		310				4,051
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													22,424
	I													7,451
21. Starch and By-Products	D					10	778	307		86				4,651
	I													575
22. Preserved Fish Products	D													583
	I													1,441
23. Other Food Manufactures	D	1					13,005	104,782	139	68				201,477
	I						63	52		142				4,789
24. Beverages	D													
	I													
25. Tobacco Products	D													10,455
	I													14,803
26. Cotton Textile Mills	D	22,892	119		102	40,319	13		1,451	520				122,021
	I	25			304	1,172			93	4				5,423
27. Other Textile Mills	D	1,093				767		52	9	83				4,574
	I	1,335			31	16,070			31	852				18,325
28. Knitting Mill Products	D	3,922			105	2,636								6,705
	I	606				800								1,406
29. Cordage, Rope and Twine	D									33				33
	I		819			42			129	8				998
30. Other Textile Manulactures	D			278	117					68				463
	I				2,036	663				2,292				4,991
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D		47	20										20,463
	I		28	13										12,400
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D		70		8		60,559	35,874	411	1,940	22,987		985	176,478
	I	1,320			141	51	13,666	15,268	991	10,433	5,264		519	100,728
35. Mechanical and Metallurgical	D							2,938	41,923	1,017	29,132			121,859
	I		87		30	1,275		1,056	86,718	3,740	54,400			152,250
36. Other Manufactured Products	D	144			2,740	2,335	6,210	12,628	8,118	62,288	103,180	24,835		273,509
	I	128	90		20,357	2,080	6,077	2,877	4,419	45,667	11,155	5,089		119,599
37. Construction	D													
	I													
38. Trade, Transport, and Services	D	13,371	4,659	1,354	12,638	34,677	47,477	73,782	68,304	129,318			61,600	2,087,384
	I	554	59		2,651	2,545	2,862	2,494	8,178	8,153	6,626	13,672	15,342	86,150
39. Fuel and Energy	D	755	221	13	226	741	2,561	3,744	6,371	23,851		110,292	12,040	251,043
	I						320	211	21	15		109,866	34,699	145,176
TOTAL PRODUCED INPUTS		49,674	13,350	5,743	46,333	123,864	159,659	260,995	245,310	380,175	361,771	298,517	199,799	6,286,423
Total Domestic Production		42,526	11,975	5,728	15,963	81,673	130,626	235,098	127,259	292,204	325,812	80,796	74,625	5,320,597
Total Imports (FOB)														
Other Expenditures on Imports														
40. (a) Expenditures Abroad														
40. (b) Customs Duties		2,546	292	2	4,820	13,517	4,141	3,578	17,444	13,519	12,914	34,694	27,773	182,586
Total Cost of Imports		7,148	1,375	15	30,370	42,191	29,033	25,897	118,051	87,971	35,959	217,721	125,174	965,825
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		18,322	9,979	1,459	14,979	40,520	78,639	112,931	96,374	253,698	303,179	5,012,886	165,405	11,952,841
42. GROSS VALUE OF PRODUCTION (At Purchaser's Price)		67,996	23,329	7,202	61,312	164,384	238,298	373,926	341,684	633,873	664,950	5,311,403	365,204	18,[illegible]263

Table E—Projections of Industrial Transactions (With Limited Import Substitution of Domestic Products for Imported Raw Materials and Intermediate Products), 1975

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Palay 1	Corn 2	Cotton 3	Virginia Tobacco 4	Native Tobacco 5	Livestock, Poultry, Dairy 6	Other Agricultural 7	Fishing and Hunting 8	Forestry 9	Mining 10	Slaughter Houses 11	Preserved and Prepared Meat 12	Dairy Products 13	Rice Mill Products 14
1. Palay	D	40,156					30,098								1,087,123
	I														
2. Corn	D		6,834				69,319								
	I														
3. Cotton	D			26											
	I														
4. Virginia Tobacco	D				706										
	I														
5. Native Tobacco	D					433									
	I														
6. Livestock, Poultry, Dairy	D											391,936		3,061	
	I														
7. Other Agricultural	D						40,462	58,659					505	2,994	
	I												8,515	164	
8. Fishing and Hunting	D						7,761		4,506						
	I														
9. Forestry	D	1,459	247		145	129		2,273						10	
	I														
10. Mining	D														
	I														
11. Slaughter Houses	D												32,927		
	I												63		
12. Preserved and Prepared Meat	D														
	I														
13. Dairy Products	D													3,757	
	I													2,472	
14. Rice Mill Products	D						93,190								906
	I														
15. Corn Mill Products	D						7,923								
	I														
16. Other Grain Mill Products	D													420	
	I														
17. Bakery Products	D														
	I														
18. Vermicelli and Noodles	D														
	I														
19. Vegetable Lard and Margarine	D														
	I														
20. Prepared Animal Feeds	D						39,402								
	I						13,092								
21. Starch and By-Products	D													87	
	I													396	
22. Preserved Fish Products	D														
	I														
23. Other Food Manufactures	D								10,278				568	4,133	
	I													3,052	
24. Beverages	D														
	I														
25. Tobacco Products	D														
	I														
26. Cotton Textile Mill Products	D														
	I														
27. Other Textile Mill Products	D														
	I														
28. Knitting Mill Products	D														
	I														
29. Cordage, Rope and Twine	D														
	I														
30. Other Textile Manufactures	D														
	I														
31. Footwear	D														
	I														
32. Wearing Apparel, etc.	D	15,584	5,994	5				2,871							362
	I	9,494	3,649	2				1,747							220
33. Soap and Other Cleansers	D														
	I														
34. Other Chemical Products	D	4,868	990	47	360	80	435	6,984			5,299		1,514	338	
	I	11,612	2,365	111	861	195	1,034	16,658	502		12,639				
35. Mechanical and Metallurgical	D	13,137	2,214		1,319	1,151	7,217	20,474					3,722	4,944	
	I												1,009	1,246	
36. Other Manufactured Products	D												2,334	1,487	
	I												2,271	1,342	
37. Construction	D														
	I														
38. Trade, Transport and Services	D	160,937	25,183			21,997	136,759	502,292	182,634	253,635	90,478	243,042	24,033	21,477	294,582
	I	2,476	666	14	118	25	2,527	3,407	69		1,719		1,766	888	22
39. Fuel and Energy	D								38,834	31,068	22,750		820	1,526	5,510
	I														
TOTAL PRODUCED INPUTS		263,101	49,052	224	3,667	24,044	451,244	619,986	236,914	284,703	135,217	634,978	82,254	55,161	1,388,753
Total Domestic Production		236,141	41,462	78	2,530	23,790	432,566	593,553	236,252	284,703	118,527	634,978	66,423	44,051	1,388,483
Total Imports (FOB)															
Other Expenditures on Imports															
40 (a) Expenditures Abroad															
40 (b) Customs Duties		3,378	910	19	158	34	2,025	4,621	91		2,332		2,207	1,550	28
Total Cost of Imports		26,960	7,590	146	1,137	254	18,678	26,433	662		16,690		15,831	11,110	270
Domestic Production + Imports															
T & T Margins on Output															
41. VALUE ADDED		1,067,004	191,907	376	93,044	12,380	1,862,709	2,096,217	667,809	1,004,516	396,642	600,721	25,673	52,775	108,688
42. GROSS VALUE OF PRODUCTION		1,330,105	240,959	600	96,711	36,424	2,313,953	2,716,203	904,723	1,289,219	531,859	1,235,699	107,927	107,936	1,497,441

Table E—Projections of Industrial Transactions (With Limited Import Substitution of Domestic Products for Imported Raw Materials and Intermediate Products), 1975 (Continued)

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Corn Mill Products 15	Other Grain Mill Products 16	Bakery Products 17	Vermicelli and Noodles 18	Vegetable Lard and Margarine 19	Prepared Animal Feeds 20	Starch and By-Products 21	Preserved Fish Products 22	Other Food Manufactures 23	Beverages 24	Tobacco Products 25	Cotton Textile Mill Products 26	Other Textile Mill Products 27
1. Palay	D		51,670		373					81				
	I													
2. Corn	D	139,733												
	I													
3. Cotton	D													
	I												52,285	
4. Virginia Tobacco	D											91,796		
	I													
5. Native Tobacco	D											15,939		
	I													
6. Livestock, Poultry, Dairy	D				5					20				
	I													
7. Other Agricultural	D		7,513	198	148	42,142	343	628		333,158			2,459	42,033
	I						1,520			10,700	1,118			
8. Fishing and Hunting	D						2,553		2,357	156				
	I													
9. Forestry	D			2,355	15	14	15			1,105		13,065		41
	I									420				
10. Mining	D													
	I													
11. Slaughter Houses	D									62				
	I				326					188				
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D									68				
	I									39	174			
14. Rice Mill Products	D		11,422		4,500						2,581			
	I													
15. Corn Mill Products	D				286		7,411	6,534		57				
	I													
16. Other Grain Mill Products	D			106,327	1,767					1,162	4			
	I									2	6,909			
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													
	I													
21. Starch and By-Products	D			86	878			3,117		858			44	
	I				20					60			455	
22. Preserved Fish Products	D								1,711					
	I						2,532							
23. Other Food Manufactures	D			18,516		98	227		127	77,501	24,860		9	
	I			1,702						2,473	10			
24. Beverages	D													
	I													
25. Tobacco Products	D											15,796		
	I											22,366		
26. Cotton Textile Mill Products	D												93,676	26
	I												6,032	
27. Other Textile Mill Products	D												3,608	776
	I													13
28. Knitting Mill Products	D									67				
	I													
29. Cordage, Rope and Twine	D													
	I													
30. Other Textile Manufactures	D													
	I													
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D	938	1,380				955			1,911			489	32
	I	463	843				579			1,162			303	22
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D			19,802	72	27,152			18	489	26,228			
	I			926	5	512		8		1,040	29,451		10,396	1,625
35. Mechanical and Metallurgical	D								146	20,233	2,009			
	I								45	5,474	547			
36. Other Manufactured Products	D			6,809	1,026	2,721		346	1,511	16,272	25,953	26,855		
	I			6,434	184	335		340	191	14,757	5,077	4,832		
37. Construction	D													
	I													
38. Trade, Transport and Services	D	24,168	28,443	18,437	1,894	22,706	7,737	4,091	3,094	240,477	116,768	104,826	87,500	15,477
	I	45	76	3,390	60	111	795	40	27	4,405	6,425	1,778	7,471	221
39. Fuel and Energy	D	1,081	1,073	2,779	123	1,437	186	407	146	11,563	3,497	14,531	6,290	538
	I							61						
TOTAL PRODUCED INPUTS		166,492	102,530	191,523	6,928	97,391	30,628	15,643	9,419	752,125	259,670	330,360	286,246	61,115
Total Domestic Production		165,920	101,501	175,309	6,587	96,270	23,927	15,123	9,110	705,240	201,900	282,808	194,075	58,923
Total Imports (FOB)														
Other Expenditures on Imports														
40 (a) Expenditures Abroad														
40 (b) Customs Duties		64	110	3,762	72	163	949	71	46	6,165	8,059	18,576	15,229	310
Total Cost of Imports		572	1,029	16,214	341	1,121	6,701	520	309	46,885	57,770	47,552	92,171	2,192
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		7,448	24,115	92,161	3,089	18,367	8,808	5,568	5,214	516,006	304,279	202,989	123,954	17,806
42. GROSS VALUE OF PRODUCTION		173,940	126,645	283,684	10,017	115,758	39,436	21,211	14,633	1,268,131	563,949	533,349	410,200	78,921

Table E—Projections of Industrial Transactions (With Limited Import Substitution of Domestic Products for Imported Raw Materials and Intermediate Products), 1975 (Continued)

(Thousands of Pesos at 1956 Prices)

CONSUMING / PRODUCING		Knitting Mill Products 28	Cordage, Rope and Twine 29	Other Textile Manufactures 30	Footwear 31	Wearing Apparel 32	Soap and Other Cleansers 33	Other Chemical Products 34	Mechanical and Metallurgical 35	Other Manufactured Products 36	Construction 37	Trade, Transport, and Services 38	Fuel and Energy 39	TOTAL INTER-MEDIATE DEMAND
1. Palay	D							275						1,209,776
	I													
2. Corn	D													215,886
	I													
3. Cotton	D	533								42				601
	I	970								12				53,267
4. Virginia Tobacco	D													92,502
	I													
5. Native Tobacco	D													16,372
	I													
6. Livestock, Poultry, Dairy	D													395,022
	I													
7. Other Agricultural	D		11,923	8,077	3	114	15			6,741				558,116
	I					5,879	53	62		2,414				30,424
8. Fishing and Hunting	D													17,333
	I													
9. Forestry	D				47	42	19	847	263	99,586	223,953	121		345,751
	I									258				678
10. Mining	D							243	971	32,057	21,679			54,950
	I							234	62	2,923			83,221	86,440
11. Slaughter Houses	D									5,768				38,757
	I						2,709	311						3,597
12. Preserved and Prepared Meat	D													
	I													
13. Dairy Products	D													3,825
	I													2,685
14. Rice Mill Products	D													112,599
	I													
15. Corn Mill Products	D													22,211
	I													
16. Other Grain Mill Products	D					123		316	29					109,965
	I					4		4	2	614				7,535
17. Bakery Products	D													
	I													
18. Vermicelli and Noodles	D													
	I													
19. Vegetable Lard and Margarine	D													
	I													
20. Prepared Animal Feeds	D													39,402
	I													13,092
21. Starch and By-Products	D					16	1,139	511		171				6,907
	I													931
22. Preserved Fish Products	D													1,711
	I													2,532
23. Other Food Manufactures	D	2					18,877	177,812	329	136				333,473
	I						92	89		280				7,698
24. Beverages	D													
	I													
25. Tobacco Products	D													15,796
	I													22,366
26. Cotton Textile Mill Products	D	35,044	207		755	59,505	20		3,443	1,031				193,707
	I	39				1,844			218	6				8,139
27. Other Textile Mill Products	D	1,672				1,135		89	19	164				7,463
	I	2,044			57	23,777			74	1,683				27,648
28. Knitting Mill Products	D	6,004			196	3,901								10,168
	I	928				1,184								2,112
29. Cordage, Rope and Twine	D									64				64
	I		1,424			62			305	15				1,806
30. Other Textile Manufactures	D			553	218					134				905
	I				3,784	981				4,532				9,297
31. Footwear	D													
	I													
32. Wearing Apparel, etc.	D		82	39										30,642
	I		50	26										18,560
33. Soap and Other Cleansers	D													
	I													
34. Other Chemical Products	D		122		16		87,901	60,878	974	3,835	48,627		1,740	298,769
	I	2,021			262	75	19,837	25,908	2,350	20,627	11,137		916	173,073
35. Mechanical and Metallurgical	D							4,986	99,408	2,012	61,628			244,600
	I		151		57	1,887		1,791	205,636	7,394	115,081			340,318
36. Other Manufactured Products	D	219			5,094	3,454	9,015	21,429	19,251	123,148	218,272	43,503		528,699
	I	197	157		37,846	3,077	8,821	4,882	10,479	90,289	23,597	8,912		224,020
37. Construction	D													
	I													
38. Trade, Transport & Services	D	20,470	8,097	2,692	23,495	51,304	68,913	125,207	161,968	255,675			108,783	3,459,271
	I	849	102		4,928	3,772	4,152	4,233	19,391	16,117	14,017	23,947	27,097	157,147
39. Fuel and Energy	D	1,156	384	26	420	1,095	3,717	6,354	15,107	47,156		193,189	21,263	434,026
	I						465	358	50	30		192,446	61,278	254,688
TOTAL PRODUCED INPUTS		76,036	23,206	11,417	86,140	182,769	231,756	442,855	579,475	751,556	765,309	522,890	353,031	10,565,808
Total Domestic Production		65,100	20,815	11,387	30,244	120,689	189,616	398,947	301,762	577,720	574,159	236,813	131,786	8,799,268
Total Imports (FOB)														
Other Expenditures on Imports														
40 (a) Expenditures Abroad														
40 (b) Customs Duties		3,888	507	4	8,962	19,538	6,011	6,036	39,146	26,642	27,318	60,772	48,733	318,486
Total Cost of Imports		10,936	2,391	30	55,896	62,080	42,140	43,908	277,713	173,836	191,150	286,077	221,245	1,766,540
Domestic Production + Imports														
T & T Margins on Output														
41. VALUE ADDED		28,031	17,347	2,901	27,847	59,057	114,145	190,527	218,114	499,991	641,362	8,780,722	289,725	20,380,034
42. GROSS VALUE OF PRODUCTION		104,067	40,553	14,318	113,987	241,826	345,901	633,382	797,589	1,251,547	1,406,671	9,303,612	642,756	30,945,842

Table F–Philippines: Direct and Indirect Requirements of Domestic Raw Material and Intermediate Products per Unit of Final Demand for Domestically Produced Goods, 1956.

CONSUMING / PRODUCING	Palay 1	Corn 2	Cotton 3	Virginia Tobacco 4	Native Tobacco 5	Livestock, Poultry and Dairy 6	Other Agricultural 7	Fishing and Hunting 8	Forestry 9	Mining 10	Slaughter Houses 11	Preserved and Prepared Meat 12	Dairy Products 13
1. Palay	10,311,318	23	431	30	38	450,288	15	12	1	54	142,822	43,670	13,298
2. Corn	17	10,291,921	293	28	45	363,084	11	31	1	37	115,163	35,223	13,291
3. Cotton	11	24	10,450,825	5	14	2	1	1		1	1	10	7
4. Virginia Tobacco				10,073,537									
5. Native Tobacco					10,120,290								
6. Livestock, Poultry and Dairy	20	22	69	226	567	10,000,009	20	23	15	22	3,171,788	968,062	294,142
7. Other Agricultural	3,855	4,702	73,285	4,263	4,340	181,263	10,223,206	32,852	133	9,043	57,564	94,593	417,079
8. Fishing and Hunting	2	2	34	3	4	44,786	1	10,050,064		4	14,205	4,348	1,371
9. Forestry	12,511	11,888	4,782	27,465	66,727	1,614	9,731	1,197	10,000,864	1,332	1,353	22,335	17,205
10. Mining	483	512	1,409	3,968	9,937	211	453	336	269	10,000,406	330	7,485	6,466
11. Slaughter Houses	62	68	202	712	1,786	29	63	66	48	67	10,000,056	3,052,112	906
12. Preserved and Prepared Meat												10,000,000	
13. Dairy Products	1	1	15	1				7		2		6	10,360,615
14. Rice Mill Products	1	1	4	10	24	422,417	1	1	1	1	133,982	40,893	12,426
15. Corn Mill Products	20	25	352	25	33	66,243	12	37	1	44	21,012	6,503	5,107
16. Other Grain Mill Products		1	10					5		1		4	16
17. Bakery Products													
18. Vermicelli and Noodles													
19. Vegetable Lard and Margarine													
20. Prepared Animal Feeds			1	4	10	170,280					54,009	16,484	5,009
21. Starch and By-Products	62	78	1,100	75	94	11	38	100	3	136	5	278	10,190
22. Preserved Fish Products													
23. Other Food Manufacture	12,598	14,091	270,777	12,595	7,944	3,462	8,801	122,099	274	33,342	1,149	103,523	434,630
24. Beverages													
25. Tobacco													
26. Cotton Textile Mill	547	1,157	378	20	49	87	51	3	1	2	29	44	33
27. Other Textile Mills	618	1,298	549	27	56	99	62	3	2	18	33	78	53
28. Knitting Mill Products	2,057	4,359	1,419	1	1	325	185	11		3	103	41	54
29. Cordage, Rope and Twine	1	1	2	8	20		1	1	1	1	1	14	10
30. Other Textile Manufacture	1	2	5	17	43	1	2	1	1	2	1	30	21
31. Footwear													
32. Wearing Apparel, etc.	120,832	256,040	82,466	25	19	19,086	10,820	220	1	62	6,054	2,088	1,734
33. Soap and Other Cleansers													
34. Other Chemical Products	42,050	47,063	907,224	42,140	26,466	6,223	29,367	1,671	914	111,708	2,140	158,002	39,498
35. Mechanical and Metallurgical	106,202	98,726	12,518	843	1,029	41,945	80,311	2,312	31	1,557	13,324	365,647	504,395
36. Other Manufactured Products	13,292	14,697	40,919	154,444	388,027	6,211	13,514	12,990	10,511	14,119	12,226	273,150	192,116
37. Construction													
38. Trade, Transportation and Services	1,317,124	1,174,030	277,618	50,888	6,239,385	871,931	1,928,610	2,145,219	2,019,461	1,816,039	2,253,008	3,137,924	2,438,975
39. Fuel and Energy	32,337	29,898	20,359	8,536	151,555	24,868	44,193	493,941	293,023	483,355	50,763	167,621	226,627

Table F–Philippines: Direct and Indirect Requirements of Domestic Raw Materials and Intermediate Products per Unit of Final Demand for Domestically Produced Goods, 1956. (Continued)

CONSUMING / PRODUCING	Rice Mill Products 14	Corn Mill Products 15	Other Grain Mill Products 16	Bakery Products 17	Vermicelli and Noodles 18	Vegetable Lard and Margarine 19	Prepared Animal Feeds 20	Starch and By-Products 21	Preserved Fish Products 22	Other Food Manufacture 23	Beverages 24	Tobacco 25	Cotton Textile Mill 26
1. Palay	7,489,220	19	4,533,849	109,448	476,433	1,259	854,628	23	108	915	34,599	47	1
2. Corn	13	8,267,913	11	1,341	498,046	865	1,553,764	2,985,686	161	2,580	329	62	303
3. Cotton	9	24	15	12	44	15	28	17	47	11	20	22	1
4. Virginia Tobacco												1,786,703	
5. Native Tobacco												311,676	
6. Livestock, Poultry and Dairy	30	30	30	491	6,814	595	35	339	1,930	604	828	915	16
7. Other Agricultural	2,889	4,024	565,303	271,409	207,673	3,934,838	109,626	357,976	43,436	2,861,336	170,756	4,508	102,251
8. Fishing and Hunting	1	2	1	117	34	100	650,579	2	1,833,100	1,320	81	5	
9. Forestry	9,935	10,232	7,161	110,313	109,910	39,696	8,269	21,892	105,062	25,440	45,413	306,076	1,029
10. Mining	616	622	584	8,400	30,060	11,043	608	5,979	33,888	4,634	14,410	16,037	281
11. Slaughter Houses	92	93	93	1,498	5,402	1,832	107	1,068	6,077	1,312	2,576	2,885	50
12. Preserved and Prepared Meat													
13. Dairy Products	1	1		52	1	44	4		7	596	35		
14. Rice Mill Products	10,006,055	1	838,058	20,172	17,373	28	1,141,823	14	82	59	45,835	39	1
15. Corn Mill Products	15	10,000,021	13	1,604	602,132	1,024	1,879,273	3,611,168	123	3,098	367	41	366
16. Other Grain Mill Products			10,000,000	240,454	203,871	29	3		5	394	23		
17. Bakery Products				10,000,000									
18. Vermicelli and Noodles					10,000,000								
19. Vegetable Lard and Margarine						10,000,000							
20. Prepared Animal Feeds	1	1	1	8	116	10	10,000,000	6	33	10	14	16	
21. Starch and By-Products	47	68	39	5,060	1,027,965	3,197	95	11,722,623	337	8,486	1,081	114	1,188
22. Preserved Fish Products									11,323,938				
23. Dther Food Manufacture	9,235	11,415	6,161	926,665	26,657	787,545	72,634	4,962	133,874	10,655,028	624,161	3,524	486
24. Beverages											10,000,000		
25. Tobacco												10,305,209	
26. Cotton Textile Mill	409	1,174	702	66	254	75	1,363	454	168	121	78	79	10,004,504
27. Other Textile Mills	462	1,315	786	181	288	450	1,520	507	183	136	157	85	82,766
28. Knitting Mill Products	1,536	4,420	2,641	145	402	136	5,135	1,603	12	926	61		192
29. Cordage, Rope and Twine	1	1	1	16	60	20	1	12	67	9	28	32	1
30. Other Textile Manufacture	2	2	2	35	131	43	2	26	147	19	62	70	1
31. Footwear													
32. Wearing Apparel, etc.	90,183	259,628	155,110	5,445	23,549	5,388	301,403	94,135	255	19,167	1,548	13	11,277
33. Soap and Other Cleansers													
34. Other Chemical Products	30,822	38,124	20,562	775,404	88,836	2,608,362	11,466	16,490	21,739	14,108	517,892	11,563	910
35. Mechanical and Metallurgical	77,157	79,330	51,153	25,425	14,386	65,700	25,743	31,845	121,761	199,029	54,101	1,235	836
36. Other Manufactured Products	19,997	20,032	20,128	315,588	1,173,194	389,570	22,382	232,011	1,318,826	171,642	553,047	626,711	10.942
37. Construction													
38. Trade, Transportation and Services	2,941,409	2,362,346	2,983,626	1,219,030	2,709,351	3,501,354	2,985,054	3,281,857	3,178,490	2,668,432	2,498,068	2,472,735	2,059,490
39. Fuel and Energy	104,626	119,341	151,658	162,324	261,961	256,014	162,146	337,499	325,423	169,599	153,559	376,338	193,017

Table F–Philippines: Direct and Indirect Requirements of Domestic Raw Materials and Intermediate Products per Unit of Final Demand for Domestically Produced Goods, 1956. (Continued)

CONSUMING / PRODUCING	Other Textile Mill 27	Knitting Mill Products 28	Cordage, Rope and Twing 29	Other Textile Manufacture 30	Footwear 31	Wearing Apparel & Other Made-up Textile 32	Soap and Other Cleansers 33	Other Chemical Products 34	Mechanical and Metallurgical 35	Other Manufactured Products 36	Construction 37	Trade Transportation and Services 38	Fuel and Energy 39
1. Palay	9	5	21	9	35	12	1, 408	5, 263	27	750	301	4	15
2. Corn	7	12	17	8	49	206	10, 820	3, 552	33	1,053	288	5	11
3. Cotton	2	56, 752	3	4	115	916	16	19	10	395	62	2	
4. Virginia Tobacco													
5. Native Tobacco													
6. Livestock, Poultry and Dairy	26	54	24	27	741	248	679	814	417	16, 214	2, 565	76	16
7. Other Agricultural	5, 488, 768	96, 679	3, 009, 118	5, 998, 432	15, 105	33, 450	385, 958	890, 722	4, 235	66, 861	41, 512	366	2, 550
8. Fishing and Hunting	1		2	1	3	1	179	412	3	74	26		1
9. Forestry	11, 364	3, 127	3, 931	6, 591	44, 508	15, 278	40, 324	56, 812	26, 092	882, 667	1, 732, 308	4, 276	905
10. Mining	511	942	463	540	12, 978	4, 338	12, 204	16, 758	19, 726	284, 111	199, 698	1, 334	280
11. Slaughter Houses	82	169	76	86	2, 335	780	2, 061	2, 382	1, 314	51, 120	8, 081	240	49
12. Preserved and Prepared Meat													
13. Dairy Products			1				80	185	1	1	7		1
14. Rice Mill Products	1	2	1	1	31	10	33	45	18	685	109	3	1
15. Corn Mill Products	7	13	20	9	31	240	13, 062	4, 266	24	670	253	3	12
16. Other Grain Mill Products							53	122		1	4		
17. Bakery Products													
18. Vermicelli and Noodles													
19. Vegetable Lard and Margarine													
20. Prepared Animal Feeds		1			13	4	12	14	7	276	44	1	
21. Starch and By-Products	23	41	61	27	85	772	42, 179	13, 347	68	1, 823	750	9	39
22. Preserved Fish Products													
23. Other Food Manufacture	4, 840	2, 007	12, 693	5, 233	1, 183	356	1, 421, 529	3, 303, 418	9, 222	14, 001	117, 330	258	9, 265
24. Beverages													
25. Tobacco													
26. Cotton Textile Mill	47	235, 469	51, 110	159	469	45, 137	70	93	36	1, 404	223	7	1
27. Other Textile Mills	10, 099, 168	174, 087	548	181	367	50, 280	473	1, 667	292	1, 488	302	7	6
28. Knitting Mill Products	168	10,612,133	398	592	18, 222	170, 220	129	289	1	3	11		1
29. Cordage, Rope and Twine	1	2	10, 000, 001	1	26	9	22	25	15	566	89	3	1
30. Other Textile Manufacture	2	4	2	10, 401, 262	19, 923	19	48	54	32	1, 236	195	6	1
31. Footwear					10, 000, 000								
32. Wearing Apparel, etc.	9, 869	883	23, 358	34, 786	76	10, 000, 120	2, 906	6, 092	20	147	235	1	17
33. Soap and Other Cleansers							10, 000, 000						
34. Other Chemical Products	16, 147	5, 860	42, 484	17, 457	3, 762	1, 111	2, 815, 132	11, 067, 938	15, 763	42, 553	391, 768	844	31, 039
35. Mechanical and Metallurgical	43, 141	898	24, 102	47, 143	1, 016	561	50, 301	152, 658	10, 369, 384	19, 653	462, 649	101	444
36. Other Manufactured Products	17, 711	36, 694	16, 335	18, 629	507, 279	169, 542	432, 619	482, 258	285, 302	11, 105, 645	1, 754, 314	52. 147	10, 449
37. Construction											10, 000, 000		
38. Trade, Transportation and Services	3, 036, 186	2, 225, 454	2, 614, 715	3, 106, 559	2, 205, 763	2, 224, 651	3, 049, 912	3, 164, 456	2, 189, 499	2, 616, 264	960, 782	10, 048, 871	1, 763, 054
39. Fuel and Energy	138, 283	175, 950	156, 802	88, 543	107, 203	104, 617	239, 477	237, 920	259, 829	523, 911	155, 004	217, 993	10, 379, 938